A Sandhills Publication

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Smart Computing

In Plain English ®

The Death Of Tech Support

How To Get The Help You Need

IBM ThinkPad X Series

CNET Editors Choice Award, March, 2004
IBM ThinkPad X40

Take a look at our latest models. And get something nice to shout about.

Why IBM ThinkPad Notebooks?

To make IBM ThinkPad® notebooks even more valuable, each one featured here comes with all the following ThinkVantage™ Technologies:

IBM Active Protection System:
Butterfingers unite! IBM ThinkPad notebooks now include airbag like technology to help protect your hard drive from some damage caused by drops and jolts (select models).

NEW! Rescue and Recovery with Rapid Restore:
Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access Connections:
Switch between wired and wireless connections.

Embedded Security Subsystem 2.0:[1]
Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private.

Access IBM:
Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

NEW! IBM ThinkPad R51

System Features:
- Intel® Centrino™ Mobile Technology
  - Intel Pentium® M Processor 1.50GHz[2]
  - Intel PRO/Wireless Network Connection 802.11b/g[3]
- Microsoft Windows XP Professional[4]
- 15" SXGA+ TFT display (1400x1050)
- 256MB DDR SDRAM[5]
- 40GB hard drive[6]
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength[16]
- 1-yr system/battery limited warranty[7]

NavCode 1836BDU-M419

THINK EXPRESS MODEL PRICED AT: **$1,499***

With Microsoft Office Small Business Edition 2003:[8] $1,739

NEW! IBM ThinkPad T42

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 1.50GHz
  - Intel PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 14.1" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- Only 1" thin,[10] 4.5-lb travel weight[9]
- 1-yr system/battery limited warranty[7]

NavCode 2378DTU-M419

THINK EXPRESS MODEL PRICED AT: **$1,629**

With Microsoft Office Small Business Edition 2003: $1,869

ServicePac Service Upgrade:
3-yr Depot Repair #30L9192 **$132**

NEW! IBM ThinkPad T42

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 735 (1.70GHz, 400MHz FSB)
  - Intel PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" SXGA+ TFT display (1400x1050)
- 512MB DDR SDRAM
- 64MB ATI Mobility RADEON 9600 graphics
- 60GB hard drive (7200 RPM)
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty[7]

NavCode 2379DXU-M419

THINK EXPRESS MODEL PRICED AT: **$2,529**

With Microsoft Office Small Business Edition 2003: $2,769

ServicePac Service Upgrade:
4-yr Onsite Repair/9x5/Next Business Day Response #69P9198 **$299**

IBM ThinkPad X40

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor ULV 1GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 20GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard[12]
- Only .94" thin
- 2.7-lb travel weight
- 1-yr system/battery limited warranty[7]

NavCode 23861CU-M419

THINK EXPRESS MODEL PRICED AT: **$1,499**

With Microsoft Office Small Business Edition 2003: $1,739

ServicePac® Service Upgrade:[11]
2-yr Onsite Repair/9x5/Next Business Day Response #30L9189 **$197**

IBM ThinkPad X40

Distinctive IBM Innovations:
- Longest standard battery life of any leading-brand notebook[13]

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard
- 7.5-hr Li-Ion battery[17]
- 1-yr system/battery limited warranty[7]

NavCode 23866GU-M419

THINK EXPRESS MODEL PRICED AT: **$1,749**

ServicePac Service Upgrade:
3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **$243**

IBM ThinkPad X40 Solution Pack

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor ULV 1GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 20GB hard drive
- Only .94" thin
- 2.7-lb travel weight
- 1-yr system/battery limited warranty[7]

Accessories Included:
- ThinkPad X4 UltraBase™ Dock
- IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 23861ZU-M419

THINK EXPRESS MODEL PRICED AT: **$1,799**

ServicePac Service Upgrade:
3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **$243**

IBM ThinkPad X40 Solution Pack

Distinctive IBM Innovations:
- Longest standard battery life of any leading-brand notebook

System Features:
- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 7.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty[7]

Accessories Included:
- ThinkPad X4 UltraBase Dock
- IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 23826UU-M419

THINK EXPRESS MODEL PRICED AT: **$2,199**

ServicePac Service Upgrade:
5-yr Onsite Repair/9x5/Next Business Day Response #69P9200 **$449**

NavCode® Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

(Monitor not included)

(Monitor not included)

(Monitor not included)

Why IBM ThinkCentre PCs?

Only IBM offers these features to protect you, connect you, and keep you working. Each ThinkCentre™ desktop featured here can give you the efficiency, productivity and edge you need with the following ThinkVantage Technologies:

IBM Rapid Restore Ultra:

Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access IBM:

Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of resources and assistance.

ImageUltra™ Builder:

Need to roll out new systems? Image and copy your operating system across your network in a flash. (Order separately)

IBM ThinkCentre A50p

System Features:
- Intel® Pentium® 4 Processor 520 with HT Technology
  - Processor speed 2.80GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 256MB DDR PC2700[5]
- 40GB hard drive • CD-RW
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite® Millennium license
- 1-yr parts/1-yr limited onsite service limited warranty[14]

NavCode 843398U-M419

THINK EXPRESS MODEL PRICED AT: **$699**

IBM ThinkCentre A50

Distinctive IBM Innovations:
- The smallest IBM desktop without compromise: 62% smaller than a standard IBM desktop

System Features:
- Intel Pentium 4 Processor 520 with HT Technology
  - Processor speed 2.80GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 256MB DDR PC2700
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 3-yr parts/1-yr limited onsite service limited warranty[14]

NavCode 841933U-M419

THINK EXPRESS MODEL PRICED AT: **$749**

ServicePac Service Upgrade: 4-yr Onsite Repair/9x5/Next Business Day Response #69P9158 **$198**

IBM ThinkCentre A50p

System Features:
- Intel Pentium 4 Processor 520 with HT Technology
  - Processor speed 2.80GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 256MB DDR PC2700
- 40GB hard drive • CD-RW
- Norton AntiVirus with 90 days of virus definition updates
- Integrated 10/100 Ethernet
- Lotus SmartSuite Millennium license
- 3-yr parts/1-yr limited onsite service limited warranty[14]

NavCode 843298U-M419

THINK EXPRESS MODEL PRICED AT: **$799**

IBM ThinkCentre S50

Distinctive IBM Innovations:
- The smallest IBM desktop without compromise: 62% smaller than a standard IBM desktop

System Features:
- Intel Pentium 4 Processor 520 with HT Technology
  - Processor speed 2.80GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 512MB DDR PC2700
- 40GB hard drive • CD-ROM
- Norton AntiVirus with 90 days of virus definition updates
- Gigabit Ethernet-integrated
- 3-yr limited warranty with limited onsite service[14]

NavCode 818336U-M419 **$1,079**

With Microsoft Office Small Business Edition 2003: $1,319

ServicePac Service Upgrade: 4-yr Onsite/9x5/4-hr Response #69P9162 **$250**

IBM ThinkCentre M50

System Features:
- Intel Pentium 4 Processor 520 with HT Technology
  - Processor speed 2.80GHz
  - 800MHz FSB
- Microsoft Windows XP Professional
- 512MB DDR PC2700
- 40GB hard drive • CD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- 3-yr limited warranty with limited onsite service[14]

NavCode 8187EJU-M419 **$1,049**

With Microsoft Office Small Business Edition 2003: $1,288

ServicePac Service Upgrade: 3-yr Onsite/9x5/4-hr Response #41L2734 **$129**

intel inside centrino™ MOBILE TECHNOLOGY

IBM recommends Microsoft® Windows® XP Professional for Business.

IBM ThinkExpress Program:

We've designed and priced many of our products specifically for small and medium businesses. And best of all, they're available direct from IBM or through select IBM Business Partners.

IBM ThinkPad Accessories

Belkin Components Universal Notebook Travel Surge Protector #22P7127 **$20**

Targus Deluxe Mobile Essentials Kit #22P7437 **$60**

ThinkPad Premiere Leather Carrying Case[15] #10K0209 **$99**

ThinkPad 72W AC/DC Combo Adapter #22P9010 **$99**

ThinkPad Port Replicator II #74P6733 **$179**

IBM ThinkCentre Accessories

IBM 128MB USB 2.0 High-Speed Memory Key #22P9229 **$59**

Lexmark X5270 All-in-One Printer #22P8808 **$140**

IBM ThinkVision™ L170 17" Flat Panel Monitor with system purchase #W9SPAB0 **$449**

IBM

1 866 426-0062 | **ibm.com**/shop/m443

Focus For August

The Death Of Tech Support

Reviews

Editor's Note

In the "olden days" of personal computing, computers were simple, operating systems were small, and software worked every time. OK, so software didn't work every time. But when it didn't, we knew what to do: We called tech support. The rep would walk us through the problem and almost always come up with a solution.

It was pretty straightforward, really. The support rep knew everything there was to know about the company's product, and he knew all about the computer configurations typical of those who called in.

After all, there *weren't* that many configurations. In those days, the rep could be pretty sure that his caller was using DOS, was running a 286 machine with an EGA card, and . . . well, that's about it. In the PC world, that's all there was. Reps didn't worry about the caller's version of Windows, which device drivers were installed, which type of video card was being used, the motherboard's chipset, which USB devices were installed, what networking protocols were running (and whether the network was wired or wireless), what type of internal and external hard drives were installed, and on and on and on . . . .

But let's not carry this too far. Yes, things were simpler then, but this is not a simplistic harkening back to some supposed "golden era" of computing. The fact is that these days we demand multitasking, configuration choices, and the functionality provided by a bewildering array of peripherals. The resultant complexity is the price we pay.

Yet, there's no denying that help lines are no longer as, well, helpful as they used to be. Vendors work with razor-thin margins, and support gets short shrift. This month we focus on how tech support works (or fails to work) and what you can do about it. Perhaps we can introduce a measure of calm into an otherwise frustrating experience.

ROD SCHER, PUBLICATION EDITOR

Now Available On Newsstands . . .

Computer Power User · Hands-On Networking
You're doing yourself an injustice if you only use your home network to share an Internet connection. We have more than 12 do-it-yourself projects to help you get the full benefit of having a network. You'll also find tips on editing your audio archives to make your old music sound new—plus tons more!

PC Today · Boost Windows With Free Software!
Looking to boost your Windows PC's performance or extend its capabilities without breaking the bank? Check out this month's *PC Today* for how-to's and reviews of shareware in nine top categories.

CE Tips · How To Use Your PDA
This issue looks at the emergence of PDAs as multimedia and communications tools and shows you how to accomplish basic tasks and navigate higher-end functions and menus for both Pocket PC and Palm OS devices. You'll also get product news, reviews, and tutorials for everything from portable gadgets to big-screen TVs.

Smart Computing Reference Series · PC Modder
It's baaa-ack. The latest edition of *PC Modder* is packed with dozens of new CPU and graphics card benchmark case studies. Get all the information you need on the hottest cards and chips for your PC. Oh, and our friend the Mad Modder is back, too. This time he decides to experiment with dry ice.

Corrections/Clarifications
In "New Features Turn Zip Into 9.0" on page 22 of the June issue, we said that WinZip 9.0 can't create a self-extracting archive. In fact, it can with its WinZip Self-Extractor Personal Edition feature, accessible in the Make.Exe File option under the Actions menu.

Sandhills™ Publishing

Compiled by Christian Perry

Spam Persists, But Help Is On The Way

Recent figures show spam continues to be a major nuisance, but major industry players are preparing massive counteracts against the intrusive email barrage.

According to MessageLabs, which provides managed email security services for worldwide businesses, more than two-thirds of the 840 million email messages it filters for 8,500 customers are spam, with the United States suffering the most with 87% of total traffic identified as spam. There's a big drop-off to the next region listed, the United Kingdom, with 52%, followed by Germany at 45%, Australia at 32%, the Netherlands at 30%, and Hong Kong at 27%.

Although these figures and others like them appear intimidating, big Internet-related companies aren't giving up. In fact, Yahoo!, Microsoft, and others are pushing ambitious plans that seek to stop spam marketers from bombarding users with unsolicited email.

Yahoo! released a new email standard called DomainKeys that places an embedded digital signature in outgoing email messages that matches a signature on the email server that sends them, which can help ISPs (Internet service providers) prevent the sending of messages from unauthorized users. Because many spammers use email spoofing to hide their identities, tracking and stopping spammers is difficult business, and Yahoo! expects this key-matching process to help boost security in an architecture that isn't very secure by design. Not only can the signature process help stop general spam, but it also can help combat outright fraud where scammers send faked emails from seemingly legitimate financial institutions and other sources.

Similar methods are emerging elsewhere in the industry. Microsoft continues to develop its Caller ID For E-Mail standard, which uses a verification process similar to what Yahoo!'s DomainKeys uses. Caller ID For E-Mail is part of Microsoft's CSRI (Coordinated Spam Reduction Initiative), a long-range plan that uses technology to reduce spam.

Searching For A Household Name

According to a new study by Leo J. Shapiro & Associates, people are now as familiar with Google as they are with Microsoft and Amazon.com. Of the respondents in the study, 76% heard of or used the popular search engine.

Google: Sounds Good To Me

Google is booming its way into public recognition, which could have a major impact on the company's IPO (initial public offering), expected this summer. Here are some findings from the study:

20% of respondents used Google within 24 hours of the survey

94% of respondents earning more than $70,000 a year heard of or used Google

83% of respondents earning $40,000 to $70,000 heard of or used Google

60% of respondents earning less than $40,000 heard of or used Google

60% consider Google a good investment, compared to 17% who don't

26% heard that Google is holding a public stock auction

Illustrations: Lori Garris

Secret Surveyor

Stealth monitoring once only existed in criminal and law enforcement territories, but recently developers started packaging surveillance software for the retail market, particularly for parents who want to track their kids' online activities. Now this software is becoming at once ever more sophisticated and user-friendly, and Rampell Software's ViewRemote (http://www.viewremote.com) is no exception.

This $70 software doesn't just track activity on a computer, but it delivers its surveillance results to you on the Internet so that you can view everything that's happening on another online computer located anywhere. Simply install the software on the PC you want to monitor, configure it to record what you want,
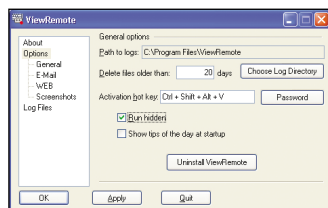
and then go away. At any time thereafter, you can go to the ViewRemote Web site, log in, and immediately view that PC and everything that ViewRemote captured since you left.

This software isn't the first to deliver remote monitoring capabilities, but the Web tie-in makes it a powerful choice. However, it's also a potentially dangerous choice because all recorded keystrokes—including any passwords and financial information—are sent to the ViewRemote data center for archival. In other words, you'll need to trust Rampell Software to keep that data secure, especially if you also use any PC that ViewRemote monitors.

Surf Your Way To Musical Scores

Many guitarists agree that the Internet is the best thing to happen to the instrument in the last decade, especially considering the abundance of online tablature databases and other helpful resources. Pianists aren't quite as blessed because online sheet music isn't as easy to find, but thanks to a joint venture between music publisher Hal Leonard and Britain's Music Sales, Sheet Music Direct (http://www.sheetmusicdirect.com) now offers more than 10,000 titles for piano, voice, and guitar, and its prices aren't bad, either.

To use sheet music that you download from the site, you'll

need to install the Scorch 2 sheet music viewer, a free application that you also can download from the site. This innovative program not only lets you view and print your scores, but it also can play them for you to give you an idea of what's happening in the score and when.

At $3.95 per score, Sheet Music Direct delivers a nice option for musicians who don't want to blow their budget on an expensive songbook that includes only one or two scores they actually want.

Picture This Do-It-All Software

Today, taking pictures isn't quite as challenging as managing them, particularly when our hard drives are jam-packed with hundreds or thousands of digital shots. Plenty of utilities are available that can help us edit or organize our pictures, but it's tough to find an easy-to-use program that does both well. Luminous Parrot Technologies claims to offer an "all-in-one digital photo organizer, manager, and photo creativity" utility with its Dream in Pictures software, so we put the software to the test to see if it fits the bill.

Dream in Pictures gives you a wealth of sorting options after you import your pictures, including a timeline, a topic, and a rating system that uses stars and ribbons. Because we inevitably take dreadful shots along with divine shots, the rating system isn't a bad idea if you don't want to discard the dreadful shots altogether. You also can place pictures in a slideshow that's easy to customize, and if you want even more interactivity, you can create games based on your pictures. Another nifty feature is the 3D Gallery, which lets you "walk" through a virtual gallery in first-person mode to view your pictures on the walls. People can view or play these features using a free player that's included with the software and is available for download from the company's Web site. Also included is a nice variety of photo-editing tools with basic options such as sharpen, red-eye, and others that perform fairly well.
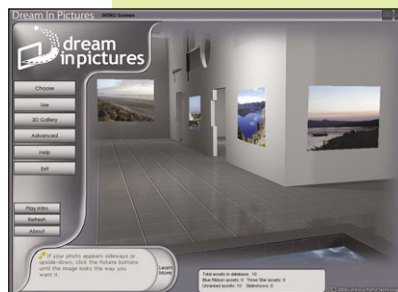
The software's interface tries to be unique, but the lack of a standard menu-based system and toolbars can prove frustrating. Another con is the software's CPU utilization—switching between windows or simply sliding a window across the screen hits your processor hard even if your PC is well within the software's hefty system recommendations. But if you can live with the nonstandard interface and the occasional sluggish performance, you'll likely appreciate Dream in Pictures' impressive organizational and interactivity options.

Dream in Pictures

$49.95 • Luminous Parrot Technologies
(425) 748-5155
http://www.luminousparrot.com

Handy App Delivers News, Sports & More

So you surf the Web and check your email with your Wi-Fi-enabled handheld, but surely there must be more you can do with a go-anywhere connection. Actually, there is, if you're using Handmark Express, an easy, quick way to access news, weather, sports, stocks, maps, directions, and more.

This software is compatible with Palm OS and Windows Mobile smartphones and works as a direct Internet client, not a browser-based application, meaning you can generally get information faster than if you tried to retrieve it through Web sites. Available via subscription at http://express.handmark.com for $6.99 per month or $69.90 per year, you'll receive the client software for your device along with a login ID and password that lets you connect to the Express proxy server.

After testing the software on a Dell Axim, we marveled at the speed with which we could retrieve information, regardless of what that information was. For example, when we mapped out local addresses, maps that were fully navigable in any direction appeared on-screen in mere seconds. News, weather, stocks, and sports were similarly quick, and we particularly liked the simple layout that works smoothly on a small screen.

From the main menu, you can select a general category (such as News), which presents a new screen filled with the information itself or subcategories (in this case, All Stories, Top Stories, Business, World, Entertainment, and others). Handmark Express lets you customize your choices, which can help trim your retrieval time even further if you don't want various types of information. If you're a sports nut, the subscription seems easily worth the cost. You can receive all scores, schedules, and game updates from any major league sports, and the software even lets you customize the info for just the teams you want. The 411 option is similarly comprehensive, with reverse address and phone functions accompanying the typical search tools.

Although you can get up-to-the-minute news, sports, stocks, and other data from the Web, Handmark Express may be worth the cost if you want your online information delivered fast and easy.

Slim But Not Shady

Creative Technology's new MuVo Slim 256MB aims to blend both svelte size and looks with high-quality sound, and for the most part, it pulls it off. Most notable about the MuVo Slim is how small and light it really is. The unit weighs less than 2 ounces with the included Li-Ion rechargeable battery and is only 0.3 inches thick. At about the same height and width as a credit card, the MuVo Slim fits easily into a shirt pocket, making it a convenient travel companion. Included with the player is a black leather carrying case and a set of uncomfortably large Creative earbuds that offer decent output.

The 256MB of memory provides about four hours of MP3 music or 16 hours worth of recorded memos. Also included is an FM radio, complete with up to 32 presets and an option to record broadcasts (although the recording quality for this isn't great). You can easily drag and drop music or data files directly onto the player using Windows Explorer, which is faster than using the bundled software, but you get more playlist arrangement options when using the software. Thanks to several equalizer presets, sound quality is fantastic for such a tiny unit; also impressive is the volume level, which is sufficiently loud for even the most extreme heavy metal enthusiasts.

What we didn't like was the flimsy battery cover, which seems terribly out of place on an otherwise solid unit. In fact, our MuVo Slim didn't work unless we put constant heavy thumb pressure on the cover to push the battery into place—otherwise, the unit wouldn't turn on at all. If Creative can improve the quality of this small but crucial part, we'd certainly recommend the MuVo Slim for audiophiles on the go.

Creative MuVo Slim 256MB

$199.99
Creative Technology
(800) 998-1000
http://www.creative.com

Duly Quoted

"To make a swan would be 10 Ph.D.s worth of work."

—Carnegie Mellon graduate student Devin Balkcom describes the complexity involved in creating origami-making robots. Balkcom built a robot that can fold paper airplanes and pointed hats. (Source: *Pittsburgh Post-Gazette*)

New Products

Compiled by Kylee Dickey

Quick takes on the latest hardware and software to hit the market at press time. Manufacturers' and publishers' release dates are subject to change, so some of the products may not be available when you read this.

Hardware

1GB CompactFlash Elite Pro (CF/1024-S)

Kingston • $249
CompactFlash card with write speeds up to 5.2MBps and read speeds up to 6.1MBps
(877) 546-4786; (714) 435-2600
http://www.kingston.com

15-inch ThinkPad T42

IBM • $2,109 (and up)
Notebook with 1,024- x 768-pixel resolution, integrated Gigabit Ethernet, and CD-RW/DVD-ROM drive

Cross That Bridge When You Come To It

Sometimes you need to transfer data between two devices but don't have a computer handy to facilitate the transfer. For example, when a flash memory card is full, normally you cannot transfer the photos and reuse the card unless you have a PC nearby to which to transfer the images. However, with Delkin's USB Bridge, you can connect USB (Universal Serial Bus) devices and transfer data without the use of a PC. For example, you might copy photos from your digital camera to a USB flash drive by connecting both devices to the USB Bridge. Delkin's USB Bridge can connect a variety of USB devices, including MP3 players, external CD-R (CD-recordable) drives, external hard drives, digital cameras, memory card readers, and USB thumb drives ($69.99; 800/637-8087; 858/391-1234; http://www.delkin.com). ▮

(888) 746-7426; (914) 499-1900
http://www.ibm.com

64MB Micro MP3 Pro

Kanguru Solutions • $74.95
USB flash drive with built-in MP3 player and voice recorder
(888) 526-4878; (508) 376-4245
http://www.kanguru.com

80GB 3.5-inch Combo ION Drive

IOGEAR • $219.95
External drive with both FireWire 800 and Hi-Speed USB 2.0 connectivity
(866) 946-4327; (949) 453-8782
http://www.iogear.com

256MB+Wi-Fi SD Combination Card

SanDisk • $129
An SD card with 802.11b connectivity
(866) 726-3475; (408) 542-0500
http://www.sandisk.com

Axim X30

Dell • $199
PDA with 312MHz Intel PXA270 CPU, 240- x 320-pixel LCD, and Secure Digital slot
(800) 999-3355; (512) 338-4400
http://www.dell.com

Bluetooth Combo Print Adapter (GBP301)

IOGEAR • $129.95
Send documents wirelessly from a Bluetooth-enabled computer to a printer
(866) 946-4327; (949) 453-8782
http://www.iogear.com

ConvertX PX-AV100U Video Capture Device

Plextor • $79
Transfer video from a VCR, camcorder, or other device to your PC

Delkin USB Bridge

(800) 886-3935; (510) 440-2000
http://www.plextor.com

E400 Projector

IBM • $1,049
DLP projector with a 1500:1 contrast ratio and 1,300-lumen output
(888) 746-7426; (914) 499-1900
http://www.ibm.com

Floppy Plus 7-in-1 Card Reader

Iomega • $59.95
12-ounce card reader that supports CF-I/II, Microdrive, MMC, SD, SM, MS, MS Pro, and floppy diskettes
(800) 697-8833; (412) 690-2100
http://www.iomega.com

HDD 160GB USB 2.0 Desktop Hard Drive

Iomega • $199.95
7,200rpm drive in a space-saving enclosure
(800) 697-8833; (412) 690-2100
http://www.iomega.com

iFP-780

iRiver • $129.99
128MB MP3 player that provides up to 40 hours of battery life
(800) 399-1799
http://www.iriveramerica.com

RP-WF930-S Wireless Headphones with Surround Sound Control

Panasonic • $99.99
Wireless headphones come with a recharging stand and have built-in surround sound features
(800) 332-5368; (201) 348-7000
http://www.panasonic.com

W320

WinBook • $1,599
15.4-inch WXGA widescreen notebook with Intel Centrino technology, including 1.5GHz Pentium M processor and Intel Wireless Pro 2200 with 802.11b/g connectivity
(800) 254-7806; (614) 334-1496
http://www.winbook.com

Wireless-G Notebook Network Short Card

IOGEAR • $49.95
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http://www.autofx.com

IntelliGolf 3.6 for Sony Ericsson P800 and P900 Smartphones

Find Your Family Roots Just Like Magic

Those who have been researching their genealogy for a few years have probably heard of the popular but now discontinued genealogy software Family Origins. Last year, Family Origins fans rejoiced as Family Origins' creator Bruce Buzbee released a new program, RootsMagic, designed to help the genealogist research, organize, and present a family history. This year, the fledgling RootsMagic returns with version 2.0, which includes a number of significant improvements, including wizards for publishing a complete family history book. RootsMagic 2.0 also adds many new templates for recording sources and creating wall charts up to 57 feet wide. Plus, users will find new tools for resolving conflicts among data sources. Although RootsMagic has the advanced features serious genealogists need, its simple design makes it equally ideal for the novice genealogist ($29.95; 877/766-8762; 801/489-3102; http://www.rootsmagic.com). ▮

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Now you can keep track of your golf scores and statistics on your Symbian OS smartphone
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http://www.intelligolf.com
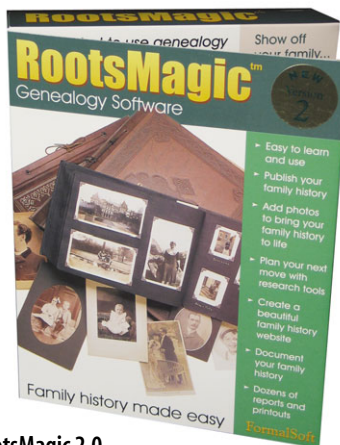
RootsMagic 2.0

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PhatWare • $29.95
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http://www.phatware.com

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Human Software • $49.95
Photo-editing plug-in that adds textures to images
http://www.humansoftware.com

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Ambrosia Software • $25
Use a paddle to break bricks in this game that you can play alone, against the computer, or over the Internet
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http://www.ambrosiasw.com

ReadingBar 2 For Internet Explorer

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Internet Explorer toolbar that will read Web page text aloud
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http://www.readingbar.com

Topo USA 5.0

DeLorme • $99.95
Mapping software with USGS (U.S. Geological Survey) topographic maps, aerial photos, and satellite images
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http://www.delorme.com

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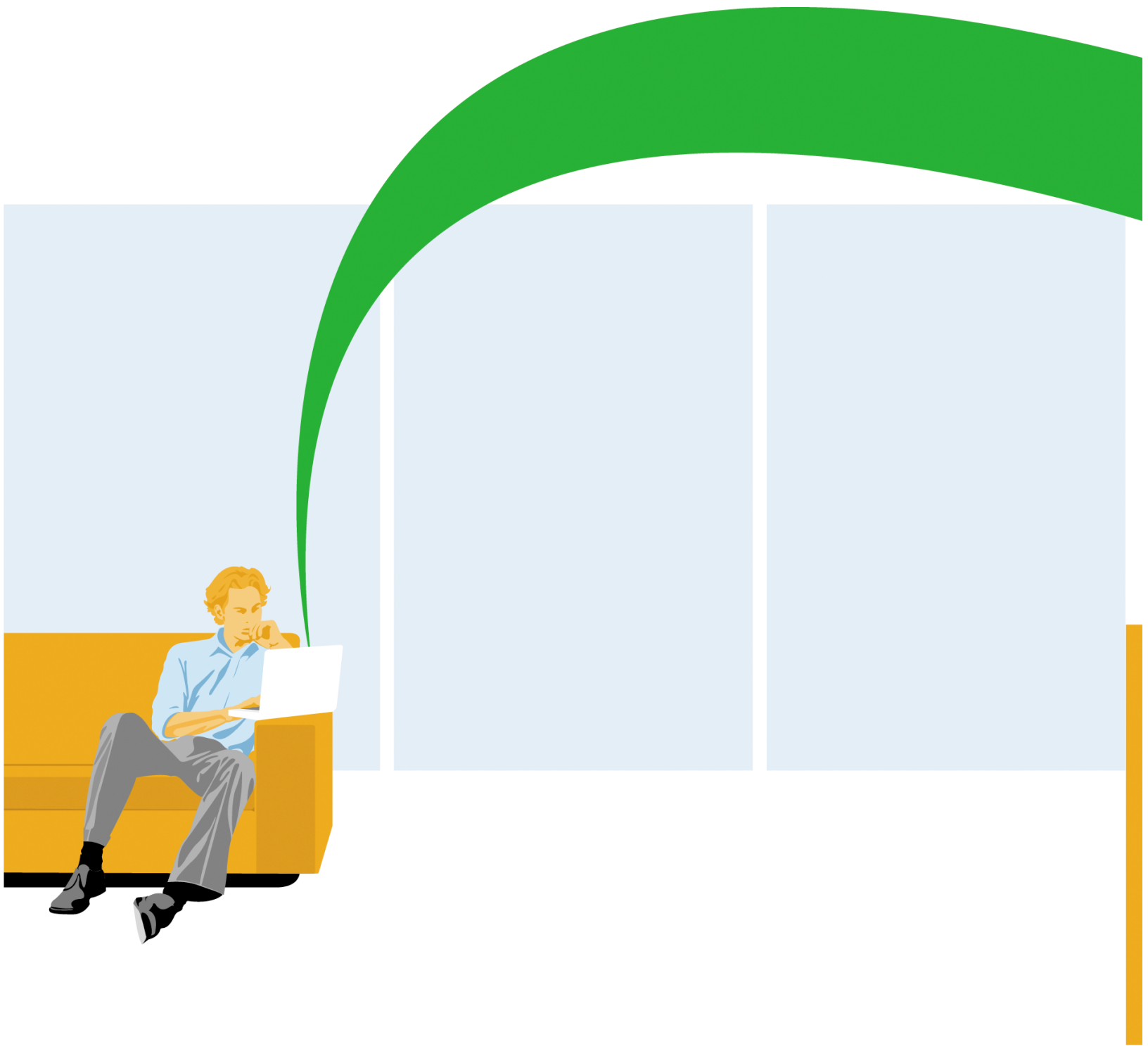
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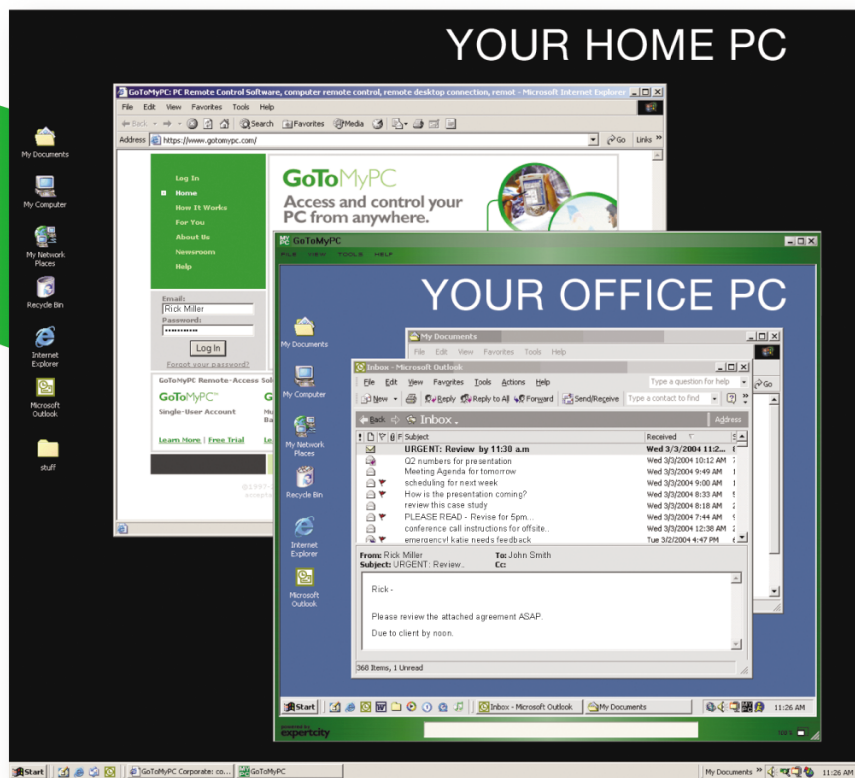
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Computerized Workout

The FitSense System Offers Stats Galore

Nathan Chandler

*Send insights and insults
to Nathan at
nathan@smartcomputing.com*

The FitSense FS-1 system is a computer-aided fitness technology that helps quantify your running or walking efforts as you work toward a long-term fitness goal. It's not a souped-up pedometer; it's a complex digital system that can help you fine-tune your body for a marathon or just give you a better understanding of how much exercise you're really getting on your nightly walks.

The Complete System

This FitSense system includes everything you need to hone your exercise regimen. In the box you get a watch with an oversized LCD (liquid-crystal display), foot pod, heart rate monitor, and a NetLink peripheral for your PC. For $50 less, you can buy the kit without a NetLink, and you can subtract another $50 if you also leave out the heart monitor. To keep this story computer-related, I used the entire system.

In short, the FS-1 works like this. The watch tracks and stores all vital statistics, including speed, calories burned, distance, and much more, as you run. It keeps tabs on these numbers by receiving data from the foot pod and heart rate monitor, which send radio signals to the watch.

After your workout, you place the watch next to the NetLink device (which connects to your PC through a 9-pin serial port), and the watch transfers your workout data to your PC. Then you can use your PC to check out the numbers on that day's workout.

On The Run

There are a couple of important steps you have to take before you can begin using the FS-1. First, you have to read the manual. This is a tedious but necessary step to using the complex FS-1, but FitSense makes things as easy as possible with its clearly written and well-diagrammed manual. You'll be lost without the information you find here.

Second, you have to calibrate the FS-1 for your particular stride. This step is crucial in making the FS-1 your own, and it's the reason the system is more accurate than common $10 pedometers. To calibrate the foot pod and watch, you need either a treadmill or the track at a nearby school. Because treadmills aren't themselves always carefully calibrated, it's best to use a track to set up the FS-1, and to do so, you run or walk at your usual pace. This brings to mind one of the system's minor downfalls: You can only calibrate the watch for one user at a time. That means your spouse can't expect accurate readouts if he borrows the watch for an evening stroll.

Once you've completed the calibration, it's time to put the FS-1 to work. To do so, make sure the foot pod is securely fastened to your shoe (a tight-fitting but easy-to-use elastic band does the job), strap on the heart monitor, and snug up the watchband. Make sure your watch is receiving data from the pod and heart monitor and get busy.

Job Well Done

To transfer your workout stats to the computer, put the watch next to the NetLink, and your computer uses the FitSense software to retrieve your workout data. If you're connected to the Internet, the software uploads this data to your profile on the FitSense Web site. Using this site, you can view graphs that show your speed, pace, total distance, calories burned, and more. This gives you an in-depth look at your overall performance, helps you plan future workouts, and lets you look back on older data to see how much you've improved.

The online feature really rounds out the FS-1, making it an excellent investment for people who really need to put numbers to their exercise routine. Though it's pricey, the FitSense system is perfect for people who are serious about marathon training or simply staying fit. ▮▮

FS-1 Speedometer
$224.99
FitSense
(800) 419-3667
(508) 303-8811
http://www.fitsense.com

The Battle Of The Bulge

Hypersonic Aviator AX6 vs. ThinkPad X40

Chad Denton

Send Chad your opinions at chad@smartcomputing.com

ThinkPad X40
$2,299
IBM
(888) 746-7426
(914) 499-1900
http://www.ibm.com
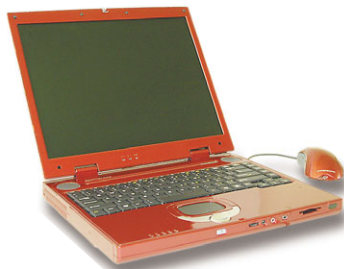
Aviator AX6
$2,753
Hypersonic
(800) 520-0498
(516) 498-9277
http://www.hypersonic-pc.com

According to the Rolling Stones, you can't always get what you want but sometimes you get what you need. If that song were released today, I might think that the song was about mobile technology. Choosing the right notebook, for instance, may not be so much about getting everything you want, but rather getting everything you need.

Notebook manufacturers make notebooks with a range of specs and sizes in an attempt to appeal to different users. These notebooks get pigeonholed into one of three categories depending on size: ultraportable; thin and light; and desktop replacement. I took a look at two polar opposites, Hypersonic's Aviator AX6 and IBM's ThinkPad X40.

Around The House

The Hypersonic Aviator AX6 is one of few notebooks to feature a 64-bit AMD processor. The 2.2GHz Athlon 64 3400+ DTR is a mobile version of AMD's desktop Athlon 64 processor. You can't take advantage of the 64-bit processor as the OS (operating system) and applications are written for more common 32-bit processors. But the Athlon 64 3400+ DTR still performed impressively.

The AX6 includes an ATI Mobility Radeon 9600 video chip with 128MB of video memory. The 9600 is outdone by ATI's 9700 model, but it can still deliver some decent performance. The 15-inch display offers a sharp looking SXGA+ (Super Extended Graphics Array; 1,400 x 1,050) resolution.

The AX6 isn't the bulkiest notebook I've ever seen, but it's fairly large. The AX6 is 1.62 inches high (with the lid closed) x 13.07 inches wide x 11.22 inches deep, and at 7.9 pounds, the AX6 can still give you a decent workout if you lug it around. The three hours of battery life wasn't bad for a larger system.

On The Road

The X40 is a sharp contrast to the AX6. Closed, the system measures just 0.94 inches x 10.5 inches x 9.32 inches, and it weighs just 3.2 pounds. The secret to its small stature is compact and energy efficient components such as a 1.2GHz Low-Voltage Pentium M processor. All this efficiency gets the X40 more than six hours of battery life with the optional 8-cell battery.

The energy efficient components, however, don't provide a lot of performance. The X40 was noticeably slower to start up. The small size also means there's no room for an integrated optical drive. Some X40 systems come with an IBM X4 Ultrabase Dock that clips to the bottom of the X40. The Ultrabase includes an optical drive, but it adds a little size and weight to the otherwise svelte X40. It was most convenient to leave the Ultrabase on my desk and use it as a docking station.

The X40's small size means a smaller display. I certainly preferred the larger display on the AX6 to the 12.1-inch display on the X40. The keyboard on the X40 was also smaller and a bit more difficult to adjust to.

Final Word

I found myself leaving the AX6 on my desk and using it as a desktop. The system is just too heavy to move much, and it runs a lot hotter than the X40. The AX6 is great for playing games, and I was excited by the possibility of playing games in the living room or even the kitchen. In practice, however, the notebook, AC adapter (which you'll need if you plan on playing for any period of time), and a controller or mouse proved too cumbersome to move.

Despite its slower performance, I preferred the X40. If you have a wireless network, you can easily surf the Web as you carry the X40 from room to room. Its small size makes it easy to carry with you. I even used a cassette adapter to play MP3 files on the X40 through my car's stereo system.

If I had to choose between the two systems, I'd probably opt for the X40. It's not about getting what you want; it's about getting what you need. I needed the portability of the X40 more than the performance of the AX6. Besides, the X40 is significantly cheaper. If you're into performance, however, you may find it easier to deal with the size and weight of the AX6 than the performance of the X40. ▮

Just When You Thought Six Was Enough

Sony's Cyber-shot DSC-F828 Fits 8 Megapixels Into An Attractive Body

Kylee Dickey

Send your comments to
kylee@smartcomputing.com

Cyber-shot DSC-F828
$999.95
Sony
(877) 865-7669
(408) 432-1600
http://www.sonystyle.com

Just when the digital camera market looked to be stabilizing with 6MP (megapixel) cameras as top consumer-level cameras, Sony released its Cyber-shot DSC-F828, the 8MP successor to the DSC-F717. I was not the only one to notice. Sony put me on a list for the camera the week it was announced, and now it was my turn to take it for a spin.

The Cyber-shot's Extreme Makeover

The F828 has a more professional look than the F717. The F828's body is more stylized and made of a black magnesium alloy. Whereas you used a pair of electronic zoom buttons on the F717, you zoom with the F828 as you would with an SLR (single-lens reflex): mechanically, by twisting the ring of the barrel. This provides greater control over zoom increments.

The F828 adds a backlit LCD (liquid-crystal display) that displays the battery indicator, number of shots remaining, aperture, shutter speed, flash mode, and more.

The F828 also has an impressive list of specs. It has an 8MP effective CCD (charge-coupled device), 7X optical zoom, and a Carl Zeiss f/2.0 – f/8.0 lens with a focal length of 7.1mm – 51mm (28mm – 200mm equivalent with a 35mm camera).

The F828 adds support for Memory Stick PRO cards (as well as Memory Sticks) and CF-I/II (CompactFlash Type I and II) cards and Microdrives. The F828 also has Hi-Speed USB (Universal Serial Bus) 2.0. The camera is PictBridge-enabled for PC-free printing from PictBridge-compatible printers.

The F828 has a rechargeable InfoLithium battery. The battery indicator displays remaining battery life and the number of minutes of usage remaining. When you plug the camera into the supplied AC adapter, the camera's built-in charger charges the battery.

In Action

The F828 looks barrel-heavy, but it's comfortable to use. The trick is to cup your hand under the barrel. This supports the camera and puts controls on the barrel within reach. You can tilt the barrel to take photos at angles that would otherwise require acrobatics.

A Quick View button would be a nice addition as it would let a user review photos sans turning the mode dial to Play. Settings such as manual aperture, manual shutter speed (30 seconds to 1/2,000 second), and manual focus provide considerable control.

Image quality was a disappointment. Indoor photos, particularly those under fluorescent lights, had a yellowish-pink tint. The Custom WB setting corrected the problems, as did shooting in natural lighting.

Many photos displayed purple halos called chromatic aberrations. There were more with the F828 than with Canon's PowerShot G5, which was widely criticized for purple halos There is quite a bit of barrel distortion in the F828, but this is common with long barrels.

The most noticeable problem with image quality is noise. Darker areas were often grainy. The culprit is likely the 8MP sensor. The F828's CCD is the same size as the 5MP F717's sensor. Each light-sensitive photosite on the F828's sensor is smaller as the CCD captures an additional 3 million pixels of data. Because the photosites are smaller, they may not register as much light, leading to image distortion. Other 8MP cameras don't suffer from such noise. The F828 was one of the first 8MP cameras to hit the market, and it looks like Sony may have rushed the technology.

The F828 does capture excellent photos with vivid colors in outdoor shots. Night Framing mode is a fun feature that lets you take photos in the dark.

The F828 Revealed

Users comfortable with adjusting settings such as aperture and white balance can work around some of the F828's image-quality problems and get a good value from the F828. But users who want the camera to do most of the work should look at other brands or wait for Sony to release its second generation of 8MP cameras. ▐▌

Find A Guinea Pig Geek

Let Your Techie Friend Try New Products

Joshua Gulick

Send your comments to
joshua@smartcomputing.com

Like it or not, the technology we use in our daily lives is becoming increasingly privy to our personal lives. Some technological innovations that require personal information are mostly beneficial, such as a car door that unlocks when it recognizes its owner's fingerprints. But many devices and programs are double-edged, offering a benefit while requiring personal information. Those handy grocery store discount cards, for example, let shoppers save money, but also let retailers track consumer shopping habits. Cookies let us view certain Web sites and online forums without repeatedly entering usernames and passwords, but also let site authors and other organizations grab our digital profile. Credit cards let us shop quickly, but thanks to the Internet, malicious users sometimes break into organizations' databases and steal our precious credit card information.

Upcoming gizmos promise to create even more security risks. For example, RFID (radio frequency identification) tags are small devices (some RFID tags are no larger than a grain of rice) that store information. Store employees can use a wireless scanning device to find RFID tags and access their data. These tags make great inventory tracking tools. They aren't widely popular yet, but with backers such as retail giant Wal-Mart, it's probably just a matter of time. Thus, a tech-savvy Spanish nightclub injects the tags into willing customers who use the tags as credit cards when buying drinks.

Two new products that are giving many consumers the jitters are camera phones and Google's forthcoming email service, Gmail. Camera phones are ordinary mobile phones that have tiny, built-in digital cameras. Although their picture quality can't compete with many full-sized digital cameras, camera phones offer several benefits that the larger cameras don't. Assuming you carry your mobile phone regularly, you'll have the camera handy when you want to take spur-of-the-moment photos, whereas someone without a camera phone needs to lug a camera around to catch impromptu pics. Also, mobile phone services let you send pictures from your phone to another phone, which means that instead of just calling home to make sure you're about to buy the right noodles, you can send a confirmation picture. Ah, the joys of technology.

When the free email service Gmail arrives (Google is already testing the service at http://www.gmail.google.com) it will boast 1GB of space per user, which dwarfs other services' 1MB to 10MB of space. But Gmail will have another feature that other services lack: content-based advertising. Gmail will scan your personal emails for certain keywords and then place related ads in the email. Sure, humans aren't reading your messages, but do you want to share them even with a computer?

Short of leaving all electronics behind and pitching a permanent tent in the wild, consumers can't stop the flood of technology, intrusive or otherwise. However, we can choose how we approach it. We can, and many people do, dismiss new technology out of hand. Why take the risk of being forced to leave your phone at the door of a restaurant, my less geeky friends ask. Why work out at a gym that allows camera phones? Why let even a program read your personal email? There are plenty of cameraless mobile phones and word-scanner-free email services, which means that you can ignore these privacy issues, at least for now. But as these and other intrusive technologies become more common, you'll find it harder to avoid them and you may find yourself weighing their pros and cons again.

There's no need to be at the bleeding edge of every trend, but keeping an eye on new technology via a friend means you'll be in a better position to choose a device or service if you find that you need it down the road. To that end, several of my friends and family members have designated me as their technology guinea pig. Instead of trying the next big thing, they ask me about it, knowing that I, a geek to the core, am only too happy to try out the new technology first. They watch, risk-free, and then make informed purchase decisions. So if you're reluctant to dive into the next big technology trend, keep your eyes and ears open when the family techie whips out her latest geek toy. ▮

Bon Appétit

Turn Your PC Into A Master Cookbook
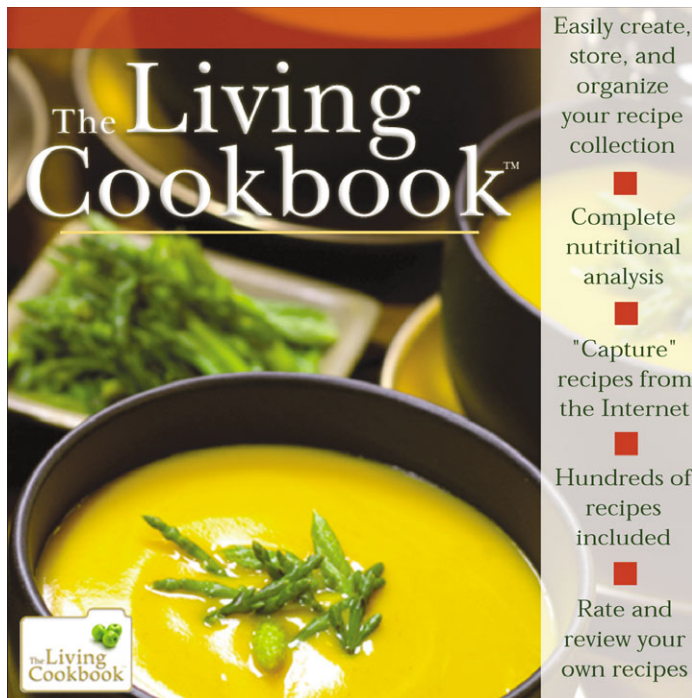
August 2004 Smart Choice • Living Cookbook

As the saying goes, if you can't stand the heat, get out of the kitchen . . . and onto the computer? OK, so that's not how the saying goes, but what's hot in food preparation these days isn't in the kitchen; it's wherever you keep your PC. Say good-bye to batter-spattered cookbooks with missing pages and say hello to the hottest innovations in cookbooks: cooking and recipe software.

Cooking apps take recipe folders to a new level. They store family recipes, add new ones, and let you more easily manage your recipes. Cooking apps help with menu planning, shopping lists, and nutritional information. To aid you in choosing a program that

works best with your PC and your kitchen, here's a rundown of four popular programs.

The Four Entrees

Dozens of quality cooking applications are on the market today. It was a difficult decision, but we ultimately narrowed the list down to four that offer useful features and options. We considered many criteria in evaluating each program, with the focus being on ease of use and product features. We installed each program on a Windows XP machine with a 1.28GHz Intel Pentium 4 processor, 128MB of RAM, and approximately 65GB of free hard drive space. This PC

met the minimum system requirements of every program we tested.

Cookbook Wizard For Windows 2.0

$17.95 (download); $23.95 (CD)
MicroBlast Software
http://www.cookbookwizard.com

If ease of use is high on your priority list when shopping for cooking applications, Cookbook Wizard is a must-see. The intuitive interface is easy to work with from the get-go, with basic commands at the top and tabs denoting important sections just beneath them. For instance, you can click a tab to browse recipes by cuisine (Caribbean Pork Roast or Asian Noodle Salad, anyone?) or category, such as dairy or seafood. You can cut down on shopping trips by using the search engine to look for recipes that contain ingredients you have at home or to reject recipes that contain ingredients you or someone else may be allergic to. And the software gives you multiple display options, such as Display Recipes By Entry Date or Display Duplicate Recipe Names, which make it easy to view the software's contents.

Cookbook Wizard comes with about 700 recipes, beginning with Angel Shrimp Scampi and ending with Zucchini Soup. Each recipe is organized by information fields, and you can tell at a glance the main ingredient, the number of servings, the preparation method, the preparation time, the type of cuisine, the food group, the difficulty level, the food temperature, and other factors. Select a recipe, and its individual card lists ingredients and instructions and allows you to add your own comments. Manually add your own recipes
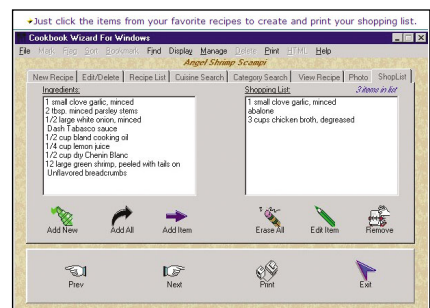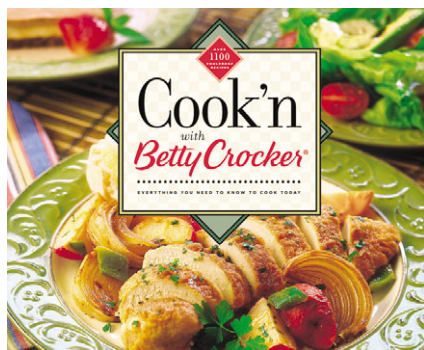
or import them from other sources, including tens of thousands of recipes on the Cookbook Wizard Web site.

Many of the recipes include nutritional information. Dieters will be happy to discover the Asparagus Soup has only 90 calories per serving, as well as four grams of protein and 12% of the USDA's recommended allowance of vitamins A and C. Sounds good, but wait a minute. Don't have any asparagus in the house? Add it to the shopping list with two button clicks. Cookbook Wizard builds a shopping list from recipes or general items you add, and the software automatically saves lists. Use the Print command to print your shopping list or use it to print recipes to assemble into a hard-copy cookbook.

Cookbook Wizard includes a virtual spice rack. Select a spice name and see a list of foods that contain that spice or select a recipe and view the spices it contains. The software also features a glossary, where you can learn Little Miss Muffet was really eating a coagulation of milk- or egg-based foods resulting from their separation into a watery liquid and clumps of semisolid material. (Yum!)

Cookbook Wizard requires Windows 9x/NT 4.0/2000/Me/XP. Download a free 30-day trial on the Web site.

Cook'n With Betty Crocker

$29.95 (CD)
DVO Enterprises
(801) 492-1290
http://www.dvo.com

Cook'n With Betty Crocker is just one in a series of titles in the Cook'n line. DVO Enterprises claims Cook'n is the best-selling recipe software today, and while we can't independently verify that claim, we certainly understand why the software is so popular. Photographs and video clips, a monthly e-newsletter for registered users, and a personal email invitation from the company president to telephone him are just some of the reasons why.

The software seems to have a personality, as you'll see as soon as you launch it. A nearly full-page color photo appears with simple menu commands and tabs (Recipes, Menu, Planner, List, Foods, and more) at the top. Video tips appear at start up, and they show you useful tricks such as how to measure spaghetti (fill a circle with your thumb and forefinger for about two servings) and how to crack an egg (break it on the counter before adding it to other ingredients to avoid eggshells in food).

Cook'n With Betty Crocker includes about 1,000 recipes from, not surprisingly, "Betty Crocker's Cookbook." You can browse, search, delete, edit, copy, create, and categorize them, and most of the recipes include mouthwatering photographs. Plus, a select few include how-to videos. For example, before making the Cheesy Bacon Quiche, click the Play Video button to watch an expert create a Bisquick crust. Add your own recipes, automatically adjust serving sizes, print recipes onto cards, or send them via email to friends and family.

One of the software's strengths lies in its meal- and menu-planning features. You can create weekly menus by simply dragging meals or recipes to the weekly menu list. If you're more ambitious, create a yearlong menu. Use these menus or individual recipes to create shopping lists, which you can print or download to a Palm-based handheld device. Plus, the shopping assistant can group items by grocery story aisle and calculate the approximate cost of your shopping list. Notable Cook'n With Betty Crocker features include a personal home nutritionist that analyzes nutritional elements of recipes and brand comparison of ingredients.

Cook'n titles require Win9x/NT 4.0/2000/Me/XP, 8MB RAM, 10MB hard drive space, and a CD-ROM drive. After purchasing one of the basic titles via download or CD (we recommend the CD because the download version does not include photos or video clips), you can supplement by downloading additional recipe sets for a fee. The online Cook'n wizard will guide you through the purchasing process.

Living Cookbook

$29.95
Radium Technologies
info@RadiumTechnologies.com
http://www.livingcookbook.com

We don't know why the company called it Living Cookbook, but the name may reflect the community of users. Log on to the Living Cookbook Web site, and you'll find thousands of involved users exchanging recipes, tips, techniques, and more. And what makes so many people interested in this software? We're betting it's the wide range of features and easy-to-use interface.

Let's start with the heart of any cookbook software program: the recipes. When you first install the software, you'll have about 200 Quick And Easy recipes, with photos and detailed descriptions, and you can add hundreds of others from your own collection, import them from other programs, or copy them from Web sites. Download free cookbooks, such as the Diabetic
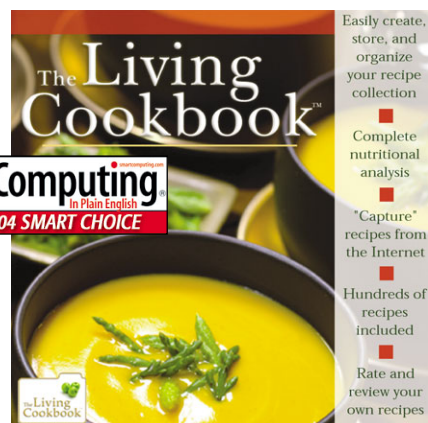
Recipes or Special Occasion cookbooks, from the Living Cookbook Web site, along with hundreds of thousands of recipes in the user forums. Search recipes by name, ingredient, recipe type, or keyword. Automatically scale recipes; convert ingredients; and customize layout, fonts, and formatting. The company is also planning a companion Web site that will allow users to download even more free recipes.

Obtain more detailed information about recipes, thanks to the nutrition calculator. This tool calculates the nutritional value of ingredients, recipes, meals, and menus (yes, the software allows you to easily plan meals and menus). And you'll learn, for example, the Herbed Chèvre Spread contains only 45 calories, but its 1.72 grams of saturated fat is 9% of the USDA's recommended daily value.

The spread contains a clove of garlic, and if you click its listing, you'll be swept to the garlic page. Did you know that along with onion, garlic was fed to thousands workers engaged in building the great pyramid of Cheops? That's just one of the many interesting facts you'll find in the ingredient database. The database covers more than 6,000 ingredients, including a detailed nutritional analysis of each one. Learn more about cooking by visiting the Cooking Reference Library, the section of the software that serves up glossary listings and cooking techniques. Other tools Living Cookbook carries include a database backup, unit converter, Web site database, and various display options.

We don't want to overlook two important components of the software: the grocery list features and the cookbook publishing. Create shopping lists, recipe cards, and even entire cookbooks with just a few mouse clicks and a printer. If you run into any technical difficulties, the help file has more than 300 topics, and the online community forums are active.

Living Cookbook's system requirements include Win9x/NT 4.0/2000/Me/XP and 45 MB hard drive space. Upgrades are free.
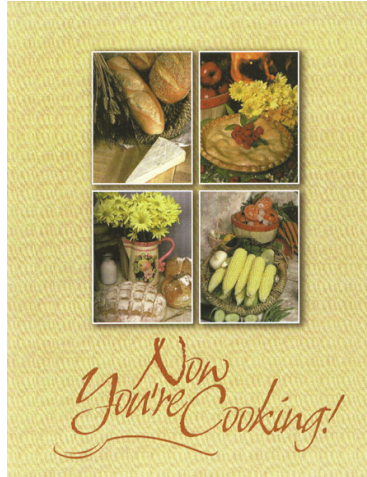
Now You're Cooking!

$25 (CD; $30 includes any upgrades)
Loginetics
sales@ffts.com
http://www.ffts.com

If you're comfortable using PC shareware, this may be the program for you. The program and its Web site have a sparse feel, but don't let the lack of photos or fancy tutorials turn you away. The Now You're Cooking (NYC) software does what it intends to do—provide you with an easy way to manage recipes, meal planning, shopping lists, and more—and it does it well.

Let's look at the recipe-related features. NYC starts with just a few recipes, but you can download more than 158,000 free recipes from the Web site. Organize them into an unlimited number of cookbooks, create and edit category listings, search recipes on a range of criteria, mark recipes for future reference, check for duplicate recipes, resize them by multiples or serving sizes, and export them to text files.

NYC doesn't stop there. It includes a number of meal-planning features, such as the ability to create multiple menus across multiple cookbooks, use a pop-up calendar, and create a shopping list from a meal plan. The shopping list is also easy to use, with the ability to add or delete items, convert from fractions to decimals, sort by grocery store aisle, and even look for coupons you have stored on your PC.

The nutrition database, which contains more than 6,200 items, provides analysis on recipes, meals, and menus, and it can analyze any recipe from any source. And NYC's cost-management features, including the shopping list cost comparison for multiple stores, can save shoppers money. NYC lets you print almost any information in the program.

NYC's system requirements include Win9x/NT/2000/Me/XP.

And Now, For Dessert

Each of the programs we reviewed impressed us—each had useful features and was relatively easy to learn. We appreciated the huge database of recipes NYC offers, Cookbook Wizard's easy-to-use interface, and the helpful personality of Cook'n With Betty Crocker. We balanced the cost, features, and interface and decided on Living Cookbook as this month's Smart Choice. ▊

BY HEIDI V. ANDERSON

BUYING TIPS

- Consider the entire cost of purchasing the software. Two programs that may at first glance appear to cost the same may ultimately be priced much differently, depending on whether you must purchase upgrades or additional cookbooks.
- There are many manufacturers in this market, and you don't want to invest a great deal of energy adding your own recipes to find the software doesn't work next year. While there's no surefire way to tell whether a company will be around, it doesn't hurt to examine the company's track record.
- Keep in mind that the demo copy of the software may not accurately reflect the depth of the product. We downloaded several trial versions and compared them to the CD versions to find they lacked graphics, the ability to add recipes, and other features. ▊

Fight Fire With Firefox

Mozilla Firefox

Free
The Mozilla Organization
http://www.mozilla.org

Anyone who had an interest in the technology industry during the mid- to late-1990s spent a considerable amount of time taking sides in the so-called Browser War. The lengthy battle between Netscape, the company that brought the browser to the masses, and Microsoft, the software behemoth that wanted a piece of the growing online action, did much to fuel Web innovation as each company raced to expand its audience by releasing new versions packed full of new features. Microsoft prevailed in the end for one very good reason: Its browser, Internet Explorer, came bundled for free with every version of Windows Microsoft sold.

IE still comes bundled free with every version of Windows, and 80% of all computer users depend on it as their primary browser. Netscape's share of the market has dwindled to practically nothing—less than 5% by most measures—but its influence continues thanks to the Mozilla project. Netscape unofficially launched the project in 1998 when it announced that it would publish the source code for Netscape Navigator. Six years later, Mozilla is on the verge of releasing Firefox (formerly referred to as Firebird), a critically acclaimed open-source browser that could spur a second Browser War.

There's certainly a lot to like about Mozilla Firefox, starting with its lean 6.2MB download. In contrast, the latest IE download is weighed down by as much as 75MB of bloated features and commercial add-ons that many users simply do not need. Instead of bulk, the Mozilla developers focused their efforts on providing only those capabilities that users most appreciate. For example, the sleek interface boasts a built-in Google search menu and a hidden pop-up blocker to go along with the handful of petite navigational buttons and the requisite address bar. The inclusion of the ad blocker and search menu saves you the hassle of downloading third-party add-ons, such as the Yahoo! Companion Toolbar or the Google Toolbar, that do the same thing.

Another thing about Firefox that we particularly liked is the tabbed browsing feature. This feature allows you to open multiple Web sites within a single Firefox window rather than opening separate windows for the sites you want to access. The open sites are identified by tabs near the top of the browser window so that you can access each one with a single click. The browser also features an integrated download manager that helps you handle your downloads by, among other things, allowing you to specify a permanent download folder and establish file associations. Firefox isn't the first browser to offer tabbed browsing and a download manager, but we certainly appreciate the features whenever they're available.

Other features worth mentioning include Type Ahead Find, a shortcut feature that lets you access **hypertext** (text-based hyperlinks) shortcuts simply by typing a few letters on the keyboard; a Password Manager that remembers your passwords and enters them in the appropriate fields whenever necessary; toolbars that are completely customizable; a large viewing window that Mozilla claims is at least 4% larger than IE's viewing window and 10% larger than Opera's; downloadable themes; and a Bookmarks Manager that lets you sort bookmarks by name, location, date added, date last visited, and several other criteria. We also enjoyed the advanced Web Features function, which makes it possible to avoid many of the Web annoyances caused by **scripts** (small programs designed to perform particular functions), such as unsolicited modifications to the size of the browser window or image content.

Mozilla Firefox 0.8 is a preview product. As with any preview product, this one will undoubtedly undergo several changes before the final version is released. A Mozilla spokesperson informed us that prerelease modifications will include a new default interface; improvements in the way the program handles **extensions** (small programs that add increased functionality to another program); the ability to migrate users' bookmarks, passwords, and even cookies to Firefox from Netscape and Microsoft browsers; the addition of an automated update notification feature, which will alert users to the presence of product updates; and the addition of Flash, RealPlayer, and QuickTime plug-ins to the browser download package.

Preview or not, Firefox is a worthy competitor to IE and is certain to gain the approval of anyone who wants to wriggle out from under the Microsoft monopoly. ▮

BY JEFF DODD

File Utilities

Put PDF To Work For You

To understand the value of pdfFactory, you must first understand the significance of the PDF (Portable Document Format). Developed by Adobe, PDF is a technology that enables content developers to publish their documents in a universally accepted electronic format without compromising graphics, fonts, layout, and other design elements. Because of PDF, users on any platform and with no other software than a free copy of Adobe Reader can access content—including rebate forms, user manuals, event entries, newsletters, and business reports—that virtually anyone could create.

Or, at least, anyone who could afford to create it. Until recently, users had only one option for creating PDF files: Adobe Acrobat. But after many years of selling the software to graphics professionals and high-end hobbyists who could justify the program's $299 price tag, the company decided to share its proprietary technology with the masses. Several software development companies quickly took advantage of Adobe's benevolence to release low-end PDF creation utilities. FinePrint's pdfFactory is arguably the best of these third-party programs.

The program itself actually exists as a printer driver that shows up whenever you access the Print command from within a Windows application. When the Print dialog box appears on-screen, you simply select pdfFactory as the designated printer and click the Print button. The document won't print on your printer; instead, a second dialog box appears in which you can configure basic fonts and links settings, preview how the document will look as a PDF file, and save it as a PDF file. You also can print the file or email it as a PDF attachment. That's all there is to it.

pdfFactory

$49.95
FinePrint Software
http://www.fineprint.com

pdfFactory is no Adobe Acrobat. You can't use the utility to edit PDF documents or generate new content. What it does (and does well) is convert content from one or more apps into a compact, searchable PDF file you can share with anyone who has Adobe Reader. Small businesses and self-employed individuals will benefit from the opportunity to create low-cost PDF files for Web and email distribution. ❚❚

BY JEFF DODD

Security

Protect Your Identity With Your PC

First the bad news: Identity theft is a growing problem in the United States. According to the Federal Trade Commission, more than 210,000 U.S. consumers were victimized by identity theft in 2003. That's nearly a third more than the number of complaints filed in 2002 and nearly seven times more than the number of identity theft complaints registered in 2000.

Now for the good news: You can help avoid this crime by taking measures to protect yourself. One of those measures involves an investment in Broderbund's Identity Theft Protector software. The program is an all-in-one protection solution. It starts with an intuitive interview that walks you through the process of gathering your confidential information into a secure database. You'll need this information so that you can close your accounts in the event someone steals your purse or wallet.

The next step in protecting yourself is education. To that end, Identity Theft Protector boasts a catalog containing dozens of articles that cover everything from common identity theft scams to maintaining your privacy while traveling. The catalog also includes a brief risk assessment test and a series of articles about identity theft from *USA Today*.

The rest of Identity Theft Protector is designed to help you detect and recover from a possible or confirmed identity theft. The Webroot Spy Sweeper, for instance, scours your system in search of malignant spyware, adware, key loggers, and other privacy intruders. If a theft has already occurred, you can use the Recovery Wizard to develop a checklist of concrete steps you should take to resolve the matter. That may not seem like much of a benefit, but anyone who has lived through identity theft will appreciate just how helpful it is to have a ready resource for getting through the complex and confusing recovery process.

You certainly don't need a computer program to get your accounts in order and prepare for the worst. But for less than $20, Identity Theft Protector is a cheap way to ensure that it gets done before you need it. ❚❚

BY JEFF DODD

Identity Theft Protector

$19.99
Broderbund
http://www.broderbund.com
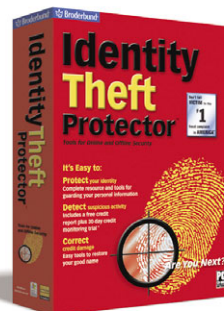
Immaculate *Wi-Fi* Reception

The 802.11g USB 2.0 adapter with twist-and-shout flexibility!

180°

IOGEAR's ultra fast Wireless-G 802.11g USB 2.0 adapter can help you connect to a wireless network with "higher power." It bends and twists to ensure optimal reception so you can work at up to 54Mbps at home or anywhere a hotspot is available.

Installation takes just moments. All IOGEAR Wireless-G products offer the latest security and are backward compatible with 802.11b.

So "retire the wire" without sacrificing Internet speeds - pick up IOGEAR's line of Wireless-G products today!

GWU513

Wireless-G to USB 2.0 Flex Adapter

• Uses USB port, not cardbus or PCI slot
• No configuration hassles
• Flexes and pivots for optimal reception

Internet

Printer

Broadband Modem

x4
Up to 4 Computers via 10/100 connection

Wireless-G Broadband Gateway

Internet File Sharing MP3

PDA

Wireless-G Notebook Network Card

Wireless-G USB Wireless Flex Adapter

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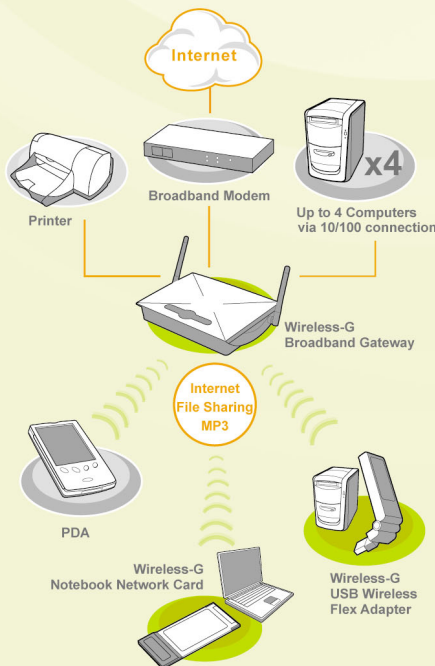
2 IN 1
WI-FI Router & Print Server!

Wireless-G Broadband Gateway/Print Server

• Fast setup in just a few simple steps
• Includes everything for effortless installation
• Built-in firewall, supports WPA and WEP
• Built-in print server shares your printer with all connected computers

GWA501

GWP511

Wireless-G Notebook Network Card

• Low-profile high-gain antenna achieves favorable sleek design
• Included Software Access Point allows you to turn your notebook into a wireless Access Point

Retire the Wire.

IMPULSE ITEMS

Cool Stuff For Less Than $20

Compiled by Joshua Gulick

See it, like it, buy it. Impulse Items are products that quicken your pulse and capture your attention but won't make you dig too deep into your wallet. Check these pages each month for the latest interesting and inexpensive computing items we've run across.

GIGANTA MOUSEPAD

Whether you play action-packed FPS (first-person shooter) computer games, slow-paced but difficult strategy games, or games that fall somewhere in between, you've probably rolled your mouse off the mousepad a time or two. Most mousepads can handle short mouse strokes, but as soon as you make Tiger Woods swing his golf club, you'll push the mouse beyond the edge of the mousepad. If you need a larger mousepad, take a look at BTP's (Blooming Tree Productions) extra-large Giganta series mousepads (http://www.gamerz stuff.com). Each mousepad is 9.5 inches high x 11.5 inches wide. If you have a traditional mouse, you can buy the Giganta V-3 for $12.95; if you have an optical mouse, you'll want to buy one of the special Giganta Optical pads, which are available for $14.95.

POD SHIELD

There's no question that Apple's portable digital music players are sleek, good-looking devices; many PC owners tote their digital music collections in the popular iPod. But looks rarely last when it comes to electronic devices. Scratches can mar your iPod's bright display, and fingerprints can muddle the device's mirror-like steel back. If you want to protect your iPod without stuffing it in a bulky, protective case, put Trendy Geek's Pod Shield (http://www.trendygeek.com) onto your pocket player. The Pod Shield has two pieces: a clear, plastic pad that attaches to your iPod's screen and a larger clear pad that wraps over the back of the iPod. The Pod Shield attaches to your iPod via static electricity instead of adhesive. Each package has six pieces (three for the back and three for the front), which means you can protect your iPod for months. The Pod Shield package is available for $9.99.

SOMETHING WRONG T-SHIRT

If you have a family member or friend who spends more time in front of the computer than anywhere else, send her a hint with ComputerGear's "Something, Somewhere Went Terribly Wrong" T-shirt (http://www.computergear.com). ComputerGear offers the T-shirt in sizes M through XL for $19.95 and XXL for $21.95. If you're in a chilly climate, buy the sweatshirt version for $29.95.

ANTI RED EYE 1.0

Digital cameras store more pictures and let you print photos from the comfort of your own home instead of running to the local 1-hour film developer. Unfortunately, even though technology has removed many of the film camera's most irritating characteristics, it still can't prevent the dreaded red-eye effect. If you use Adobe Photoshop, Jasc Paint Shop Pro, Macromedia Fireworks, or VicMan Software's VicMan's Photo Editor to edit your pictures, install VicMan Software's Anti Red Eye plug-in (http://www .vicman.net). Anti Red Eye lets you re-color eyes by creating a small rectangle over each red spot with your cursor. If you don't have any of the aforementioned photo-editing apps, you can buy Red Eye Remover 1.4, which also corrects the color of red eyes in photos. You can buy the plug-in or the standalone program for $19.95.
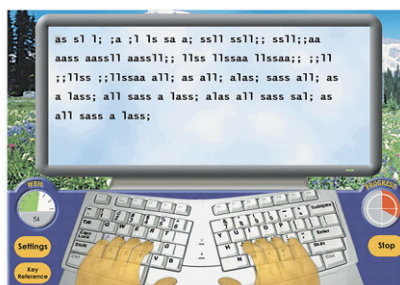
TYPING QUICK & EASY 15.0

If you have a child or grandchild, you already know that many schools teach children to type soon after they teach children to write. Give your child a head start by giving him Individual Software's Typing Quick & Easy (http://www.individual software.com). The typing tutorial software has standard typing lessons but also features a variety of typing games, including Erik The Viking, Flotsam Fighter II, and Xtreme Typing, that let him practice while having fun. Older users will enjoy the software's practice articles, which let users read while they type. The software tracks your progress and provides evaluations of strengths and weaknesses in the form of reports and graphs. Typing Quick & Easy has a price tag of $19.95.
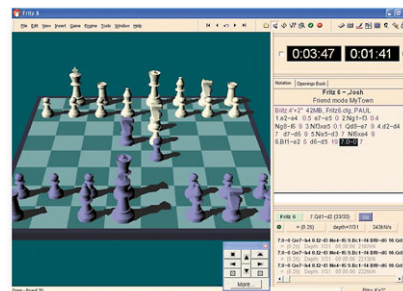
FRITZ GRANDMASTER CHALLENGE

Rainy day? No problem. Grab your chair and challenge your computer with Viva Media's Fritz Grand-Master Challenge (http://www.vivamedia.com). By default, the game displays the board in 2D mode, but you can easily switch the view to 3D mode, which has realistic chess pieces that cast shadows. If you are an experienced player, you can dive right into a game without reading any hints, but if you're new to chess, you'll probably want to consult the game's Hint feature before sending one of your pieces into harm's way. Fritz GrandMaster Challenge also has Friend Mode, which levels the playing field by automatically adjusting your computer opponent's skill level to match your own. If you choose a particularly bad move, the Coach will appear to warn you and let you take the move back. You can buy the Fritz GrandMaster Challenge for $9.99.

CIRCUIT BOARD MOUSEPAD

Most computer manufacturers use PCBs (printed circuit boards) to build the devices that create your computer's guts, but Cybercalifragilistic (http://www.cybercal.com) sees the green boards, metal, and silicon for what they really are: art. Cybercalifragilistic offers a variety of circuit board products, including the Circuit Board Mousepad, which has a green circuit board. Circuit boards aren't perfectly smooth, but Cybercalifragilistic makes each board washable and mouse-friendly by applying clear vinyl to both sides. A plastic base prevents the mousepad from slipping and protects your desk. The Circuit Board Mousepad is available for $13.95.
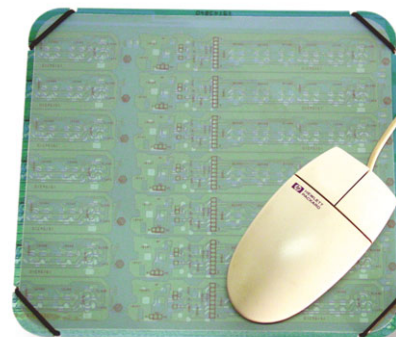
Windows XP Professional's Remote Desktop

Windows XP Professional's Remote Desktop Connection feature lets you control your WinXP Pro computer (the host) from another computer (the client) running Windows 95 or higher via a network or Internet connection. You can use a client computer to operate the applications on your host computer, view email on your host computer, and print documents using printers connected to your host computer. Everything on your host computer appears on your client computer's screen as if you were sitting in front of the host, when in fact you might be floors or miles away.

Why would you want to do such a thing? Well, if you have a WinXP Pro-based desktop PC as your primary computer and, say, a Windows 98 notebook as your mobile system, you can use Remote Desktop to receive, read, and send email on your WinXP machine from your notebook, without having to worry about synchronizing email programs on each PC. You can access and work with files you forgot to copy from your WinXP Pro system to your Win98 machine. You can use your Win98 notebook to run applications installed on your WinXP Pro machine that you can't even install on your Win98 system. If you have a home network and are especially lazy (like the author), you might even use Remote Desktop to save yourself the trouble of running from one computer to the other. Remote Desktop can also be of great value in a troubleshooting situation: A friend with WinXP Pro could access your PC from her home to help you solve a problem.

Set Up The Host

Again, in Remote Desktop Connection, the host has to be running WinXP Pro; Windows XP Home won't work.

Your first step is to set the host to allow itself to be run. Log on as an Administrator. (If you own the host computer, this is likely the way you always log on; if your employer owns the host computer, it's best to have your IT administrator set up Remote Desktop.) Click Start, right-click My Computer, and choose Properties. In the Systems Properties dialog box, click the Remote tab; under Remote Desktop, check Allow Users To Connect Remotely To This Computer.

If you haven't already set up a password for your computer, you'll see a message telling you that accounts used for remote connections must have passwords. Click OK to remove the message. (You'll take care of this in a moment.)

Next, click the Select Remote Users button. You'll see a list of user accounts on your computer. (If it's a home computer, you'll most likely see a single Administrator account). If you saw the aforementioned password message, click the User Accounts link, which opens the User Accounts dialog box. Click the account you want to enable for remote access. (Ideally, this should be the account you use to log on to the computer.) In the next screen, click Create A Password. Enter the password, confirmation, and hint. Click OK. (Be sure to choose a password you can remember.) Decide if you want to make your files and folders private. (In most cases, you won't want to do this, because you'll want access to them over the Remote Desktop Connection.) Jot down the account name and close the User Accounts dialog box. Note the name of the computer and click OK.

Make sure to leave your host computer running. If you want, you can restart it so that it opens to the logon screen.
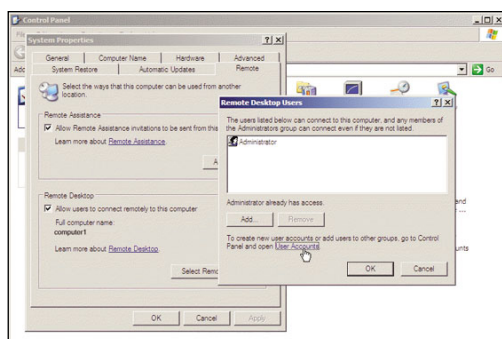
Allowing a Windows XP Professional computer to be "remotely controlled" is as easy as setting it to allow remote access and configuring at least one password-protected user account.
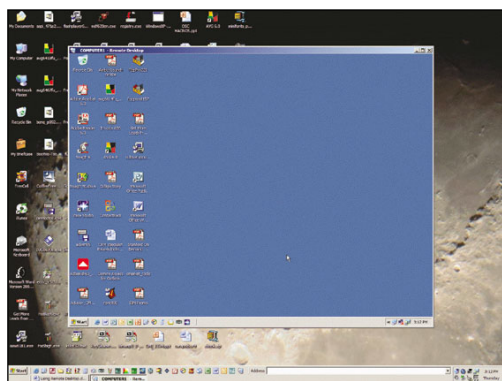
With Remote Desktop, you view and operate your host computer through a window on your client computer.

Windows XP

Set Up The Client

Again, to remotely operate your WinXP Pro host computer, your client computer must be running Win95 or higher. It must also have the Remote Desktop client installed. If your client is running WinXP Home or Professional, Remote Desktop is already installed; skip to the Connect & Control section below.

Otherwise, insert the WinXP Pro CD in the client computer's CD drive. When the Welcome To Windows XP screen appears, click Set Up Remote Desktop Connection. Follow the installation wizard's instructions.

Connect & Control

Now you're ready to connect and control your desktop computer over a network connection. On your client computer, click Start and choose Programs (or All Programs in WinXP Home), Accessories, Communications, and Remote Desktop Connection. In the Computer field, type the name of the computer you want to control.

Click Options. On the Display tab, choose the size at which your host Desktop will appear on your client screen. Typically, the best options are to choose a smaller size than your client screen or Full. You'll otherwise be forced to do some scrolling. Then click the Experience tab. Even if you have a LAN (local-area network), it's wise to consider choosing the Broadband connection speed; the LAN speed setting transmits your Desktop background, which can really slow down Remote Desktop screen performance. If you don't care a whit about your experience (and in this sort of a situation, it really doesn't matter much), choose the lowest setting, Modem (28.8Kbps [kilobits per second]). Fiddle with any other options you want to change (the defaults are fine).

Next, click Connect. Type the username, password (for your host computer), and network domain (if necessary, as it would be to connect to a computer at work) and click OK. On your client screen, a Remote Desktop window will appear. If you set your Display size to Full, your host Desktop will fill your client display and you'll see a connection bar at the top of the screen. You can use this bar to resize or minimize the Remote Desktop window. (Click the pushpin icon button to hide the connection bar until you wave your mouse pointer near the top center of the screen.)

Now you're ready to start using your Desktop, just as if you were sitting in front of it. You'll notice a few differences. For one thing, Remote Desktop doesn't support ClearType, so your fonts will look as jagged as they did in the old Win95 days. And if you try to play sound or video on your host, what you'll hear or see on the client will likely be pretty choppy. Aside from these few small differences, you're using your host computer without being anywhere near it.

When your session is complete, in the Remote Desktop window, click Start, Log Off, and then Yes. This won't shut the host system down but will return it to the WinXP logon screen, where a password is required for users to get any further.

For information on using Remote Desktop over the Internet, *Smart Computing* subscribers can read the "Remote Desktop Over The Web" sidebar at http://www.smartcomputing.com/scaug04/remotedesktop.

Save Your Connection

Once you try Remote Desktop, using it could become habitual. If it does, you won't want to have to snake your way through the Accessories menu every time you start it up. To avoid doing so, save your connection as a Desktop icon. Open the Remote Desktop Connection via the Start menu (one last time), make sure your host is displayed in the Computer box, and click Options. If necessary, click the General tab. If you want Remote Desktop to automatically enter your password, type your password in the Password box and check Save My Password. (You may not want to do this, as it might give someone who steals your computer [especially if it's a notebook] access to your Desktop.) Then click Save As. In the Save In box, select Desktop, name the connection, and then click Save. From now on, you can quickly start your Remote Desktop connection by simply double-clicking this icon on your client computer's Desktop. ▐▌

BY MARK SCAPICCHIO

Windows 2000

Solve Compatibility Problems In Windows 2000

In February 2000, Microsoft launched Windows 2000, the then-latest OS (operating system) from the Redmond giant to target the business market. Win2000 was an instant success. It was easier to install, deploy, and maintain than Windows NT, and it continued the WinNT's tradition of strong reliability. While Windows XP Professional is now Microsoft's flagship business OS, many businesses and home users still use Win2000. It's is stable, robust, and secure, so it's appealing to Windows users who value rock-solid reliability.

But this reliability doesn't mean Win2000 is trouble-free. A common problem you may encounter when you upgrade to Win2000 is a lack of compatibility with the legacy applications that ran just fine under Windows 9x/NT. Strangely enough, Win2000's security features are usually the culprit when compatibility problems cause problems with a legacy app. Users accustomed to Win9x's virtually nonexistent security may find Win2000's strong security features a bit difficult to get used to, especially if they cause problems with your valuable legacy apps.

Read on to learn more about the possible application compatibility pitfalls you might encounter when you move to Win2000 and how to deal with them when they occur.
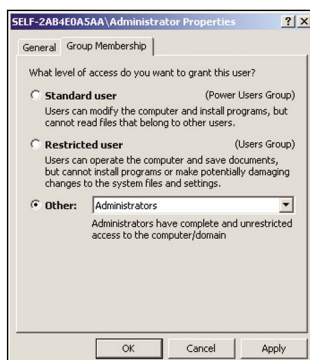
In the Properties window for this PC's Administrator username, you can see that members of the Administrator group have complete and unrestricted access to the computer and domain.

Different Rights For Different Users

When apps misbehave in Win2000, it's often because the developers didn't develop the software with Win2000's strong security features in mind. One of the cornerstones of Win2000's security model is the concept of User groups. With User groups, system administrators can set up users according to classes that enjoy different types of privileges. (By privileges, we mean the ability to perform tasks within Windows.) This structure, combined with the ability to set usage policies, gives administrators extensive control over what users can and cannot do to their computers.

Before we plunge into a discussion about application compatibility and Win2000 User groups, it is important to make a distinction between two

classes of applications: certified and legacy. **Certified applications** meet the requirements of the Windows 2000 Application Specification and have passed a series of compatibility tests to demonstrate compliance with the specification. **Legacy applications**, on the other hand, are not certified to work with Win2000. This doesn't mean you can't install a legacy application on a Win2000 PC. As you'll soon discover, the ability to install a legacy app depends on the class of user trying to install it.

Now, let's take a quick look at the various types of users available in Win2000.

Administrators. As the name implies, Administrators are all-powerful and can do just about anything within the Win2000 environment, from installing the OS to repairing an installation to modifying key system settings in the Registry. Administrator privileges are usually reserved for IT personnel charged with maintaining an installed base of Win2000 users. If you use Win2000 at home, you will want to be sure you are set up as an administrator so you can perform required system maintenance. Administrators can install and run legacy and certified apps.

Power Users. Power Users are next on the hierarchy. Even though they are not quite as powerful as Administrators, Power Users still enjoy considerable privileges in Win2000. For example, Power Users can create new local users and groups, modify existing users and groups, or change access privileges to various locations within Win2000 and the Registry. Power Users can run legacy applications and certified applications.

Users. Users are the most restricted category of User groups within Win2000. This is also the most common category found in a typical business setting: The vast majority of people in a business who use Win2000 will be categorized as Users. Users can't install legacy apps. If an application attempts to make system-wide changes while it runs, those logged in as Users will not be able to run the application. Also, Users are unable to perform many of the administrative tasks that Power Users and Administrators are able to. Depending on the general group policies system administrators set up, Users may be further

restricted in terms of the tasks they can do within Win2000.

So, why have User groups? The reason is simple: By establishing this hierarchy, Win2000 makes the job of administering a large installed base of Windows users easier. Restricting the privileges for the majority of users prevents technically unsophisticated users from unwittingly damaging their systems by installing faulty software or tweaking important settings they don't quite understand.

When Applications Misbehave

When applications misbehave in Win2000, one of three symptoms usually occurs: You can't install the application at all, the installation process fails without successfully installing the application, or the application installs successfully but runs erratically (or not at all).

Problem: You cannot install an application. If your Win2000 privileges are under the Users group, you will not be able to install a legacy application at all. Win2000 accommodates multiple Users by saving user settings, such as Desktop settings, Internet Explorer favorites, and the My Documents folder, under a hierarchy of folders located at C:\DOCUMENTS AND SETTINGS\USERNAME. So, if your username is FSMITH, there will be a folder called FSMITH in the Documents And Settings folder. A series of folders under FSMITH in turn contain all of your user settings. When you log on to the computer, the OS loads all of your user-specific settings from these folders.

In Win2000, members of the Users group can only work with their own folders under this hierarchy; for example, a user cannot open another user's folder, nor can he manipulate system files common to all users. Legacy applications that are not coded to work with Win2000 often attempt to write needed files, such as DLL (dynamic-link library) files, to system-wide folders or folders outside of your user-specific folder hierarchy. Applications under Win9x could write needed system files anywhere in Windows and even replace Windows system files with their own versions. Win2000 is much more protective of these important system files, so it does not let members of the Users group overwrite these files at all. Hence, a member of the Users group attempting to install a legacy application will not be able to do it at all.

Your options here are rather limited. If you cannot install an application and your Win2000 system is part of a network of Users in a business setting, your best bet is to consult with your system administrator and verify whether she can install the application for you. Unlike Users, Power Users and Administrators can install legacy applications. If you use Win2000 at home, make sure you log on as an Administrator. Once you do, you should be able to install the legacy application without incident.

Another solution is to check with the application's developer and find out if it has a Win2000-certified update. When Win2000 entered the market, many developers upgraded their software to make it play nice with the new OS. So it may be worthwhile to see if the developer of your legacy application has updated it for Win2000. In many cases, you will find out that this is indeed the case.

Problem: An application installation fails without completing the installation. This glitch can occur for a number of reasons. For example, if an application's installation routine attempts to write to a system-wide folder and you only have Users privileges, Win2000 will abort the install. For example, when we attempted to install an application with our Users privileges, the installation proceeded normally until the very end when the program generated the following message:

"The InstallShield Engine (iKernel.exe) could not be installed.

The folder 'C:\Program Files\Common Files\Install Shield' could not be created. Make sure that you have the appropriate privileges to create this folder (0x5)."

This message is actually quite clear: The application's install routine attempted to make changes in a system-wide directory, and Win-2000 prohibits someone with Users privileges from making this change. This is how Win2000 protects itself from potentially troublesome system-wide changes. One user can't make changes to the system that will affect other users. An Administrator or a Power User would have been able to install this with no problems.

Win2000 generates a similar message if an app attempts to make changes to the Registry beyond the area of the Registry reserved for a specific user. Those with Users privileges can only modify Registry keys located under the HKEY_CUR-RENT_USER branch. If an app attempts to write or modify a Registry key under any other branch, for example, HKEY_LOCAL_MACHINE, Win2000

The Add New User dialog box lets you set up new users in your Win2000 system with the general set of privileges you deem appropriate.

Windows 2000

will restrict this access and the application will report an error.

Download a copy of the app certified to work with Win2000 or get an Administrator or Power User to install it for you. If you're a home user, log on as an Administrator and attempt to install it.

Problem: When you attempt to run an application, you receive an error message. When launched, some legacy applications query Windows for its version number before continuing to run normally. The application runs normally only if the OS returns certain version numbers. Because legacy applications were written before Win2000, the version number Win2000 returns does not match the allowed versions listed in the application code, causing it to return an error and halt program execution. You usually get a message reporting that the program needs a particular version of Windows to run and that version is not present.

Win2000 has a handy tool to help you get around this problem: the Application Compatibility tool (Apcompat.exe). This tool lets you fool an app into thinking it's running under a previous Windows OS, not under Win2000.

To launch the Application Compatibility tool, click Start, Programs, Windows 2000 Support Tools, and Application Compatibility to launch the tool (you may have to install it from your Win2000 CD). Enter the path to the troublesome program in the Start The Following Program field or use the Browse button to search for it. Click one of the OS radio buttons to select the OS you want to emulate. Click OK. When you launch the application, the Application Compatibility tool will pass the proper version number to the application based on the OS you selected using the tool. If the version number is the only issue preventing the application from running, you are home free.

Problem: The program does not run properly after selecting an OS in Application Compatibility. After going through the steps described above, you may find your program still doesn't run properly, if at all. The Application Compatibility tool gives you some other options to coax your program into cooperating with Win2000.

The Application Compatibility tool has four checkboxes below the OS list for tweaking additional application compatibility settings. The first checkbox lets you disable the Heap Manager in

Error Editing Value

Cannot edit LogPixels: Error writing the value's new contents.

OK

When we attempted to modify a Registry key under the HKEY_LOCAL_MACHINE branch when logged in as a member of the Users group, we were unable to make the change.

Win2000 for the memory that is allocated for the program. Some legacy applications' memory management does not work well with Win2000's enhanced memory management features, so disabling the Heap Manager corrects the problem.

Another pitfall occurs when apps don't correct for the fact that the Temp folder in Win2000 is on a different path than on previous Windows versions. In Win9x, the path for the Temp folder is usually C:\WINDOWS\TEMP. In Win2000, the Temp folder path is typically C:\DOCUMENTS AND SETTINGS\USERNAME\LOCAL SETTINGS\ TEMP. If the app's code doesn't correct for this difference, an error occurs. By checking this box, the Application Compatibility tool creates a folder that corresponds to the path the app's code checks for.

If an application does not properly determine the free hard drive space in Win2000, it reports an error and stops running because it determines there isn't enough drive space to continue operating. To make sure your application correctly determines available drive space, click the Correct Disk Space Detection For 2-GB+ Drives checkbox to select this option.

Apps sometimes misreport available drive space because older application code uses a Windows API (application program interface) function that, due to the data format the function uses to report the number, obtains an incorrect value for the available drive space in hard drives with more than 2GB of free space. Win2000 certified applications don't generate this error because they use the correct Windows API function.

Click Make The Above Checkbox Settings Permanent to write your application compatibility settings to the Registry, making them permanent and keeping you from running the Application Compatibility tool every time you run the app.

Taking Security Seriously

Win2000 is a corporate-strength OS that takes security seriously. In a corporate setting, strong security and system management features take precedence over accommodating end users' desire to install whatever apps they choose. This makes life simpler for Administrators, who avoid the prospect of repairing systems, and also for end users, who enjoy a stable and reliable computing environment. If you're a home user, you'll enjoy knowing that friends who might use your computer from time to time will not cause inadvertent damage to your system configuration. ▐▌

BY SIXTO ORTIZ JR.
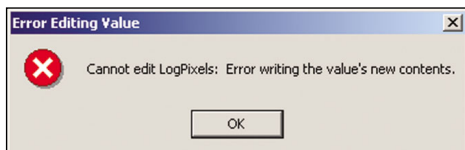
Use Windows 98's Address Bar To Its Potential

The Address bar in Windows 98 is a useful tool that provides many convenient features. We'll explore the Address bar, what it can and can't do, and how to overcome one of its limitations.

Particularly for folks who browse the Web heavily, the Address bar can be a significant time-saver. Ostensibly designed to make browsing easier by letting you access a Web page without opening Internet Explorer, the Address bar can also navigate files and folders or even run applications or DOS commands directly from your hard drive.

One thing the Address bar can't do is run commands that are internal to DOS, such as DIR and COPY. You can remedy this situation rather simply, and we'll show you how to do it.

Bar Basics

You'll find the Address bar by right-clicking the Win98 Taskbar and selecting Toolbars and Address. Once you've turned the Address bar on, you'll see the word "Address" in your Taskbar, followed by a white box. Drag the Address bar's left border over to extend its size and give you more room to type.
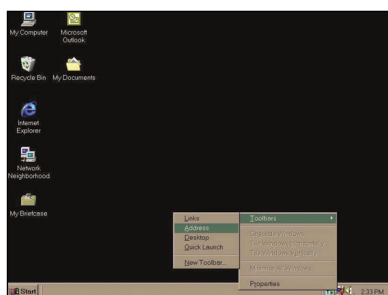
To expose the Address bar, right-click the Windows Taskbar and select Toolbar and then Address.

You'll probably notice doing this (or activating the Address bar on low-resolution monitors) can make the Taskbar cramped because it encroaches upon the limited space available to show open applications. After activating the Address bar, you'll likely want to enlarge your Taskbar.

Position your pointer at the top edge of your Taskbar until the pointer becomes an arrow. Hold the left mouse button and drag the Taskbar upward until it reaches the size you want. The Address bar takes up the entire bottom row, giving you plenty of room to type.

You can detach the Address bar from the Taskbar and position it anywhere on your Desktop. Just click the word "Address" and drag it to a new location. Once the Address bar is on the Desktop, move or resize it just like any other window.

Again, the main benefit of the Address bar is that it lets you access a Web page without having to launch IE. Enter a URL (uniform resource locator) in the Address bar and press ENTER; IE will launch and take you to the site you specified. If IE is open, the page currently loaded will update with the new site you entered. If multiple IE windows are open, the active or most recently used one will update with the new page.

The Address bar also provides IE's timesaving features. While typing an address in the Taskbar, Windows will compare the characters you type against previously entered text, in the hopes of finding a match to an address you've already entered. The Address bar also provides IE's pull-down menu to access a list of sites you've visited so you can access them with a single click.

Nose Around Your PC

Besides letting you traverse the Internet, the Address bar also lets you explore the files and folders on your PC. Typing a path in the Address bar will open a window that takes you to the contents of the particular drive or folder. Once you're there, use the window's toolbar to navigate your PC's folder structure. This can be a lot quicker than going several layers into the Start menu to launch Windows Explorer and find a file or folder.

The Address bar essentially duplicates the Run dialog box (go to Start and Run), which makes it useful for launching apps on your hard drive. Quickly run an application by typing the program name into the Address bar. Type **calc** or **notepad** to run Calculator or Notepad, respectively.

In addition to running applications that are included with Windows, the Address bar can also serve as a launching point for most other applications you have installed on your PC. As long as an app is located in the default path (the standard places Windows looks, such as C:\WINDOWS or C:\PROGRAM FILES), you can launch it directly from the Address bar. Type **aim** to launch AOL Instant Messenger (assuming, of course, that it's installed on your PC.) In some cases, you might need to enter a complete path to the application.

Use the Address bar to open a Control Panel application without going through the Start menu to access it. Typing **control panel\display** in the Address bar will open the Display dialog box.

DOS & The Address Bar

As multifaceted as the Address bar can be, things get a little more complicated when it comes to running DOS commands.

There are two different types of DOS commands: external and internal. Some examples of external DOS commands are deltree, which deletes files and folders, and attrib, which can change the file system attributes of a file or folder. External DOS commands are those that correspond to an actual program in Win98's Command folder. So if you were to look there, you would find files called deltree and attrib.

Then there are internal DOS commands. Examples are DIR, which lists the contents of a folder, and COPY, which copies a file from one place to another. Internal DOS commands are those that don't correspond to an application in the Command folder. Type **dir** at any command prompt to get a directory listing, but there's no program on your hard drive called dir.

The Address bar can handle external DOS commands just like any other app, but it can't run internal DOS commands, at least not in a straightforward way. The good news is that you can overcome this limitation with a batch file.

A **batch file** is a file that can automatically run a batch of commands or programs. Once invoked, it can perform its tasks without further user interaction. Batch files can be a simple series of commands, and more complex batch files can include variables that change the file's behavior based on the situation or input from the user.

The most noteworthy example of a batch file is the file in the root folder of almost any Win9x, autoexec.bat. This batch file can load drivers and programs before Windows starts.

Use a batch file to get around the Address bar's internal DOS command limitation by running that command within the batch file. The batch file is then run from the Address bar, which will execute it like any other program.

To create such a batch file, open Notepad and type the following:

```
@echo off
if "%1"=="" exit
if exist c:\windows\temp\temp.bat del
c:\windows\temp\temp.bat
echo %1 %2 %3 %4 %5 %6 %7 %8 %9 >
c:\windows\temp\temp.bat
call c:\windows\temp\temp.bat
if exist c:\windows\temp\temp.bat del
c:\windows\temp\temp.bat
```

Before saving the file, verify that your PC's Temp folder is C:\WINDOWS\TEMP. If it's different, change the references in the file accordingly.

After you're finished typing and verified the location of your Temp folder, go to File, select Save As, name the file +.bat, and save it into your Command folder (C:\WINDOWS\COMMAND). We're going to name it with the plus sign (+) because the plus sign key is large and conveniently located on the right side of your keyboard's numeric keypad (which doesn't require a SHIFT), but you can name the file with any other legal DOS character(s).

The batch file you just created is designed to read the command you enter after the plus sign and copy it into a new batch file called temp.bat in your Temp directory. It then executes the contents of temp.bat. Afterward, the file is deleted in order to prevent an error the next time you run it. Just in case, though, it will also check for and delete the temp.bat file the next time you run +.bat.

When you want to run an internal DOS command from the Address bar, preface the command with the plus sign, for example, + copy c:\autoexec.bat c:\windows\temp, or + dir c:\windows.

The command you run with the +.bat file will often complete almost immediately. The default behavior of the DOS window, though, is to remain open after the program is finished running, so you'll need to close it each time it's run. This scenario is preferred whenever you're running a command such as DIR that produces output that you'll need to read.

On the other hand, having to close the window each time you use the batch file can be inconvenient. To avoid the need to do this, configure the DOS window to close itself when the program is finished. Be advised that you may only briefly see the application window, and in some cases, you may not even see it at all.

To do so, go to the Command folder, right-click the +.bat icon, click Properties, select the Program tab, and put a check mark in the box labeled Close On Exit.

As neither scenario is ideal for all DOS commands, the best approach is to create an identical batch file (with a different name), perform the same steps on that file, and use it for those commands you need don't need to read the results of. ▮
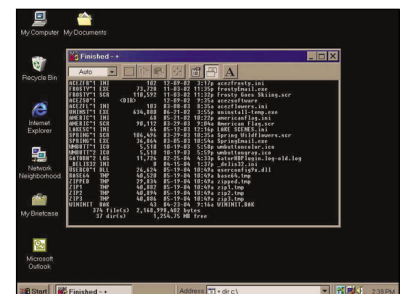
To run an internal DOS command from the Address bar, simply preface the command with a plus sign (+).

BY JOSEPH MORAN

Internet Telephones

How VoIP Will Change The Way You Talk

Long-distance calls that cost little or nothing? Sign us up! Cheap calls aren't the whole story behind VoIP (Voice over Internet Protocol) telephony, but that's what gets the hype.

IP (Internet Protocol) telephony, aka VoIP, is the new wave in communications. We're not talking about software, such as Skype (http://www.skype.com), you use to place calls with your PC. We're talking about picking up a phone, dialing a number, and talking to someone on their phone—over the Internet.

Plain old telephone service, often called POTS, is expensive over long distances and difficult to upgrade. VoIP phones address these shortcomings, but can't match POTS's clarity or reliability.

VoIP business phones compress words, break them down into IP data packets, and send them through an IP-enabled PBX (Private Branch Exchange). Alternatively, digital phone adapters convert a regular home phone's analog voice signal into digital data. In either case, the data flows from the PBX or digital phone adapter to the VoIP phone service provider's servers over the Web. The call arrives on the recipient's phone, regardless of type due to cooperation between phone service providers.

Each VoIP phone has an IP address like every PC on the Web, so it isn't tied to a physical location. You can take your phone and/or digital phone adapter with you for cheap phone calls. Service providers must keep your street address on file in case you need to dial 911.

IP phones for businesses offer more benefits, especially if they have screens like Pingtel's xpressa IP phone ($439; http://www.pingtel.com). Instead of waiting as a voice lists options, navigate menus via icons on your phone's screen. Or, Pingtel says, imagine telling Outlook to initiate a conference call to three colleagues in your Contacts folder and send them a PowerPoint presentation.

Most Internet phones on the market are for businesses with IP-compatible PBXes. A few services are aimed at home users, such as VoiceGlo (http://www.theglobe.com). Vonage (http://www.vonage.com) offers a plan with 500 minutes of local and U.S./Canada calling for $14.99. The company supplies a free Cisco ATA-186 or Motorola VT1000 digital phone adapter to connect your phone to your DSL (Digital Subscriber Line) or cable modem. (Ironically, a dial-up connection is too slow to send a VoIP phone call. Vonage recommends at least a 90Kbps [kilobits per second] broadband connection.) Vonage requires you to dial 1 and the area code before each call, but you can keep your existing phone number in some areas. Calls to other Vonage users are free.

The state of the Internet affects your VoIP experience. Congestion and DoS (denial of service) attacks can lead to outages in which your phone may not work at all. Worms and malware can slow the Web, but there's little risk any viruses could infect your IP phone or adapter (manufacturers use Java, Digest Authentication, and other mechanisms to keep conversations private). Think of VoIP as one more avenue of communication, not a replacement for your traditional phone.

1 Peggy telecommutes to her job at Company A. She phones her boss, Geri, using her regular telephone. Everything seems like she's using a traditional POTS phone, right down to the dial tone.

2 Peggy's digital phone adapter turns her analog voice signal into packets of IP data. These bits and bytes travel through her DSL or cable modem, over the Internet, and through Vonage's servers.

Peggy

Analog Voice

IP Packets

1001001010

1001001010100

1001001010100

Digital Phone Adapter

Cable or DSL Modem

Geri

4 Ted, a bugle salesman at Company B, has a regular POTS phone. Company A's VoIP service provider sends the call to Company B's phone company. At some point in this journey, the call is converted back to an analog voice signal to go through Company B's PBX, and then to Ted's analog phone.

TED

100101010

100101

10010

100101

PBX

Company A

Analog

PBX

Company B

3 Company A's phones also use VoIP, so its IP-enabled PBX routes Peggy's digital call to Geri's phone over the network. Geri doesn't have all the information Peggy needs, so she sets up a conference call with Ted at Company B.

1001001010

01010100

Phone Company

0100101010101101010101001001010101010010100110

Internet

IP Telephony Vendors

Business vendors rule most of the VoIP phone market so far. However, VoiceGlo, Vonage, and a few others offer consumer services.

Altigen
AltiGen Alti-IP 600 IP Telephone
http://www.altigen.com

Avaya
4600 Series IP Telephones
http://www.avaya.com

Cisco
7900 Series IP Phones
http://www.cisco.com

Ericsson
Dialog 4425 IP Vision, Dialog 4422 IP Office

http://www.ericsson.com

Nortel
i2004, i2002 Internet Telephones
http://www.nortelnetworks .com

Pingtel
xpressa IP phones
http://www.pingtel.com

VoiceGlo
IP phone service
http://www.theglobe.com

Vonage
IP phone service
http://www.vonage.com

All Together Now

Are Multifunction Devices Worth Their Weight?

IF YOU'VE EVER STAYED UP LATE watching infomercials on cable TV, you've probably seen advertisements for gadgets that seem to do virtually everything: "It slices, it dices, it even bends metal!" Those products might leave you wondering if one device can really perform so many different tasks well, or if it is best to have a separate tool for each job.

We haven't tried the do-it-all kitchen gadgets, fishing tools, and cleaning supplies that are hawked on those late-night commercials, but we have tested do-it-all computer peripherals.

A **multifunction device**, also known as an MFD or all-in-one, is a peripheral that works as a printer, scanner, photocopier, and depending on the model, fax machine. A printer is usually considered a necessity for every computer user. For about the same price as an ordinary printer, you can

get an MFD that does far more than just put words and pictures on paper.

All-in-ones have a variety of advantages and disadvantages when compared with using separate peripherals. Is an MFD right for you? You don't have to sit through an infomercial or call a friendly operator to find out. Just read on.

Benefits

The two biggest benefits of all-in-one devices are their small size and low cost relative to buying separate peripherals. In a cramped workspace, a separate printer, scanner, copier, and fax machine might consume all of your desk space (and electrical outlets). An MFD, usually about the size of a printer alone, uses a fraction of the desktop real estate.

With price tags from $99 to $499, an MFD could cost significantly less than

standalone peripherals, although it won't necessarily be less expensive to run. (More on this below.) MFDs are inexpensive because many of the parts that perform one function are also used to perform another. For instance, a single scanning mechanism can scan photos and make copies. The printing mechanism can print those copies in addition to printing documents from your PC. Like standard printers, MFDs are also inexpensive because the manufacturers can make up the difference in the cost of ink or toner.

For many people, the biggest benefit to an MFD is access to functions that they couldn't justify purchasing alone. If you only need to photocopy or fax a couple of pages each week, it doesn't make financial sense to buy photocopy and fax machines. An all-in-one device can add those functions

The Brother MFC-8420 offers a flatbed scanning surface and automatic document feeder.

Resembling a traditional fax machine, the MFC-8420 supports faxing.

For $130, the MultiPass 360 is a basic color inkjet printer, copier, and scanner.

The ImageClass MF5550 packs fax, automatic document feeder, printing, copying, and scanning into a do-it-all machine.

The Epson CX6400 can print proof sheets and full-sized pictures from your digital camera without help from the PC.

to your computer for virtually the same cost as a new printer, eliminating time-consuming trips to your local copy shop.

Problems

An all-in-one is multitalented, but it may not be able to perform every function as well as the standalone devices it replaces. Most of the models we tested are just fine for printing and faxing, but scans often don't equal the quality and speed of a decent standalone scanner. Likewise, although an all-in-one can be convenient to use as a copier, it can be slower and more expensive to run than a dedicated photocopier.

If your MFD breaks, your home office could be crippled rather than merely inconvenienced. Not only would you not have a printer, but you're also out a scanner, fax machine, and so on.

As a rule, inkjet printers are more expensive to run than laser printers. The toner for a typical black-and-white laser printer costs a penny or two per page, while an inkjet's ink can run from 4 cents per page for basic black text to more than a dollar per page for an 8- x 10-inch color picture. Likewise, MFDs that use inkjet printing cost more per page than ones that use laser technology. By printing incoming faxes and copying pages, you're likely to print more pages with

an MFD device than with a standard printer, further increasing the cost.

Unless you need to print and photocopy in color, it might be wise to look for an MFD that uses laser printing rather than inkjet. They cost a little more initially but can save you money in the long run. Laser printers are much faster than inkjet printers, too.

By their nature, MFDs are more complex than one-trick-pony printers. Most MFDs are covered with buttons and include special software to support copying, scanning, and faxing functions. If you need to keep the computer workstation simple (in a computer lab or as part of a technophobe's PC setup, for instance), an MFD might not be the way to go.

Using An All-In-One

Setting up an all-in-one is very similar to hooking up a traditional printer. The machine will connect to your PC via a USB (Universal Serial Bus) port. A few models, particularly those from Brother and Samsung, also include a parallel port, which is useful for connecting to older PCs that don't have a USB port.

Some midrange and high-end models include networking, allowing the machine to connect to, and be controlled by, more than one computer. If your all-in-one doesn't have built-in networking, you can use your OS'

(operating system's) printer sharing feature to use it as a shared printer. But that won't turn the machine into a fully shared device. Other features, such as scanning and faxing, may only be possible using the computer that's directly connected to the device.

As with any printer, you'll have to install a software driver so the computer can communicate with the device. All MFDs include Windows drivers. If you use Mac OS or Linux, make sure any MFD you're considering includes drivers for your OS. You may have to visit the manufacturer's Web site to get the full details about compatibility with your favorite OS. In some instances, basic printing is supported, but scanning and faxing from the PC is not.

Choosing An All-In-One

Before you settle on an all-in-one model, there are some decisions to make, starting with inkjet vs. laser output. Most of the MFDs on the market are inkjet-based, so if you go with laser, there are fewer choices to contend with.

The next question is whether you need a model that can send and receive faxes. Units with faxing capability connect to your phone line, allowing them to send and receive faxes like a traditional fax machine. Many models include the ability to

The Epson Stylus Photo RX500 and RX600 are the only all-in-ones we looked at that can scan photo negatives and slides, allowing you to digitally preserve your Kodak moments.

send and receive color faxes. This can be a nifty feature if you're connecting to another color-capable fax machine. However, color is not widely supported in traditional fax machines.

In addition, many models let you send faxes directly from the computer, for instance, letting you fax a word processing document without printing it out first. Faxing capability typically adds $50 to $100 to the price of an all-in-one.

The last major choice is between flatbed or sheetfed models, which determines how scanning, copying, and faxing work. A flatbed model resembles a standard copy machine, in which you can place an object, such as an open book, on a glass surface for scanning, copying, or faxing. On the other hand, a sheetfed model only accepts loose-leaf pages but can take a stack of them and feed them through automatically, a real time-saver when you need to copy or fax several pages. Which is better for you depends entirely on how you will use the machine. A few models offer the best of both worlds. The HP Office-jet 6110 and Brother MFC-8420, for instance, include both a flatbed and automatic document feeder.

If you use a digital camera, you might want an MFD model that includes slots for digital camera media. With this feature, you can insert your CompactFlash, SmartMedia, or other digital media into the MFD to print your photos without turning on the

computer. (Be sure the all-in-one that you choose accepts the type of media that your camera uses.)

When you're shopping for an MFD, you'll see familiar names again and again: The vast majority of consumer all-in-ones are manufactured by Brother, Canon, Epson, HP, Lexmark, and Samsung. Here's a look at some of the models that are currently available from each company.

Brother

Brother's (http://www.brother.com) MFD lineup includes a selection of laser- and inkjet-based units. For laser-based units, there's the sheetfed MFC-4800 ($249.99) and the MFC-8420 ($449.99), which includes both a flatbed and an automatic document

The Lexmark X6170 prints and copies at a breakneck 19 pages per minute.

feeder. The 8420 is also expandable—you can add a second paper tray and a network card to connect it to more than one computer. Both include the ability to send and receive faxes.

Brother has many choices for color inkjet units, including the MFC-3220c, MFC-4420c, and MFC-5200c. (The "c" in these model names stands for color.) All three models include the ability to fax. The 4420c ($199.99) has a flatbed-scanning surface and includes card readers for printing directly from your digital camera's CompactFlash, SmartMedia, or other memory cards. The sheetfed 3220c ($129.99) is among the least expensive units that include faxing. The MFC-5200c ($249.99) includes a flatbed and

automated document feeder, plus memory card readers. Many Brother models, including the 5200c, support both USB and parallel ports, a feature missing in most other brands.

Canon

Six flatbed, inkjet-based MFDs are available from Canon (http://www.usa.canon.com). On the low end of the spectrum is the MultiPass MP360 ($129.99), a basic machine for printing, copying, and flatbed scanning. For $199.99, the MultiPass MP390 adds faxing and digital camera memory card readers. The middle of the line includes the MultiPass MP730 ($299.99), which adds faxing and includes a flatbed surface and automatic document feeder.

Canon's two top-of-the-line all-in-ones are laser-based: the ImageClass MF5530 ($399) and MF5550 ($499). The 5530 includes fast copying, printing, and scanning with an automatic document feeder. The 5550 also offers fax capabilities.

Epson

Epson (http://www.epson.com) brings four MFDs to the table, all inkjet-based. The Stylus CX5400 ($149) and Stylus CX6400 ($199) are close cousins, with the ability to print photos and copies right to the edge of the paper. The CX6400 adds faxing capabilities and card slots for digital camera media. A useful feature lets the unit print a proof sheet of the images on your digital camera card: fill in the bubbles to select the pictures you like best, scan the proof sheet, and the unit will print full-sized versions of

The HP PSC 1210 will print, copy, and scan for less than $100.

Sub-$100 MFDs:
Are They Worthwhile?

In your local computer store and online, the prices of all-in-one devices might amaze you. The typical price range is from $200 to $400, but you can find some models for $99. Factoring in mail-in rebates, you may be able to score one for even less.

If you're strapped for cash, some of these bargain-basement MFDs (multifunction devices) might be worth your attention, but in the long run, they will cost you as much as, or perhaps more than, devices with a higher initial cost. HP and Lexmark currently offer all-in-ones for under $100.

The HP PSC 1210 ($99.99) is a good option for buyers on a budget. The model is particularly compact and designed to slide right up against a wall, making it a good choice for a crowded workspace. It isn't the fastest printer, but it produces great-looking images and documents. Like many inkjets, the ink isn't cheap. The retail price for HP-branded ink is $20 for black and $35 for color, so replacing both carts twice will cost more than the printer itself. HP says the black cartridge will print about 450 pages.

Lexmark has a line of low-cost models, including the PrinTrio Photo P3150 ($99.99), X2250 ($99.99), and X1185 ($79.99). These low-end Lexmarks are slow, loud, and expensive to run—not, in our experience, worth the trouble. The P3150 and X1185 can't make copies when the PC is turned off, which can be an exasperating limitation when you just need a quick copy.

None of these inexpensive machines includes the ability to send and receive faxes. Also, none of them comes bundled with a USB (Universal Serial Bus) cable, which means adding $5 to $10 to the bottom line. ▮

your favorites, all without turning on the computer.

If you need to scan 35mm film negatives or slides, the Stylus Photo RX500 ($249) and RX600 ($349) provide a unique feature: built-in transparency adapters in addition to digital camera media slots. The RX600 adds a 2.5-inch color LCD (liquid-crystal display) for viewing and editing photos without help from the PC. Neither of these models include faxing functions.

HP

HP (http://www.hp.com) has a wide selection of MFDs ranging from a $99 bare-bones unit to a $500 behemoth that can power a busy office. Churning out 22 pages per minute, the Officejet 7130 ($499.99) is among the fastest inkjet models available. It includes a flatbed scanner plus automatic document feeder, memory slots for reading your digital camera media, and fax capabilities. Its paper-handling

With its Ethernet port, HP's PSC 2510 can send scans to and faxes from any computer in your home or small office.

prowess goes beyond the norm with automatic collating and two-sided printing and copying.

The $399.99 PSC 2510 is a notable all-in-one for two reasons. First, it's the least expensive model with built-in networking: Just plug it into your Ethernet hub and up to five computers can print, scan, fax, and control its copy functions. Secondly, the unit's 2.5-inch LCD makes controlling its various functions easy.

If you prefer a laser-based machine, check out the LaserJet 3015 ($299.99), which also includes fax functions.

Lexmark

Lexmark (http://www.lexmark.com) offers a bevy of low-cost inkjet all-in-ones, with price tags from $99 to $200. The top-of-the line is the X6170 All-In-One Office Center ($199.99), which includes a flatbed and automatic document feeder, faxing, and speedy printer output. The least expensive models in the lineup aren't so impressive, however. (See the "Sub-$100 MFDs: Are They Worthwhile?" sidebar.)

Samsung

Samsung (http://www.samsungusa .com), a relative newcomer to MFD products, offers three MFDs that all use laser technology. The SF-565P ($299) packs in a laser printer, fax machine, sheetfed scanner, copier, and telephone handset. If you prefer a flatbed-scanning surface but don't need fax functions, there's the SCX-4016 ($299). For $100 more, the SCX-4216F provides the whole enchilada: fax, flatbed, and automatic document feeder.

All three models include USB and parallel ports. A word of warning, though: Toner cartridges for Samsung printers can be harder to find than those from other manufacturers.

Worth Their Weight?

The bottom line is whether MFDs are worth the money. As long as you choose the right model for your needs, an all-in-one can be a smart addition to a home or office. They're convenient, save space, and cost less than individual components. Keep in mind that for copying, they can be expensive to use relative to a standard photocopier, so you may still want to run down to Kinko's when you need to duplicate more than a few sheets. ▮

BY KEVIN SAVETZ

"Summertime—And The Downloads Are Easy . . ."

Another lazy, hazy, crazy August here at San Simoden, my estate in the Hamptons. Day after sun-kissed day with nothing to do but attend champagne-soaked brunches and beach parties with my good friends Frankie and Annette, interrupted only by the need to take medication to control my delusions. I've got a few minutes before the nurse arrives, so let's get to this month's column.

The Inspirational Web

If you're having a bad day or just feeling down in the dumps, how about an inspirational minimovie to pick up your spirits? At Inspirational Flash Movies (http://www.inspiringthots.net), you'll find topics ranging from religious themes to generic gratitude, education, children, careers, dealing with adversity, and even coping with questionable advice from well-intentioned friends or cloyingly cheerful computer-magazine columnists.

From IE To CP, PDQ

To navigate from Internet Explorer to your Control Panel or anywhere else, there's no need to go through the grueling process of minimizing your browser and clicking the Desktop or other icon.

Instead, in the Address field, enter the words **control panel** (including the slash) followed by the feature in the Control Panel you'd like to access. For example, type **control panel\display** and press ENTER to go to your Display settings. This also works if you type **windows explorer**, **my computer**, **recycle bin**, **word**, and **oe** (for Outlook Express).

Tidy Up Forwarding

Looking for a quick way to get rid of those annoying >>>> marks on forwarded email? I use a free program called EmailStripper (http://www.papercut.biz/emailStripper.htm). Just click one of its three buttons: Paste, Strip It, and Copy.

This Clock'll Doodle Do

It's one clever piece of programming that causes this clock to display as it does. IE users, navigate to http://tinyurl.com/aow0, and then move the mouse pointer around your screen and you'll see what I mean. Astound, amaze, and possibly annoy your friends. You can thank me later.

Down By The Old Mill Stream

At the Magic (Diploma) Mill (http://www.boxfreeconcepts.com/magicmill), you can choose from a wide variety of the finest fake colleges and universities. You can even create your own university if you can't get into a phony one. Need a trumped-up transcript to back up your bogus degree? Not a problem. My Ph.D. from the Verbiage Institute, the Long-Blather School of Arts and Letters proudly hangs on my faux grasscloth-covered walls. Print your diploma on some nice stationery, and you'll be on the road to success—or prison, faster than you can say, "Are there two Ps in diploma?"

"On The Road Again . . ."

A congratulatory tip of the Mr. Modem fedora to long-time reader Joline S., a wonderful lady who has taken mobile computing to the next level:

"Dear Mr. Modem, I'm starting my third year traveling the U.S. in my fifth wheel and truck, with trusty Dell laptop, Win XP, and a Datastorm two-way data satellite on the roof. It works perfectly out on the road (even in Mexico) with broadband speeds and DISH network TV attached. I'm a female, age 73, traveling alone and LOVE IT! It's a great life being on the road, yet never being out of touch thanks to the miracle of this technology. From somewhere in New Mexico, Joline."

I'm soooooooo jealous! I don't think any computer columnist has ever uttered this phrase to a reader, but "Happy modeming, and drive safely!"

Beware Of The Boomer Bug

There's a particularly insidious virus sweeping the world today that cannot be detected or deleted by any antivirus software. This dastardly digital demon primarily targets those of us who are older than 50, so keep an eye out for any of these symptoms: If you send the same email twice or send a blank email; if you send email to the wrong person or if you send it back to the person who sent it to you. If you mention an attachment and then forget to send it; if you click Send before you're finished writing a message or press Print instead of Save and then shout at the computer for beginning to print, you may have been exposed to the C-Nile virus. If so, welcome to the club. ▌▌

BY Mr. Modem

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit http://www.MrModem.com.
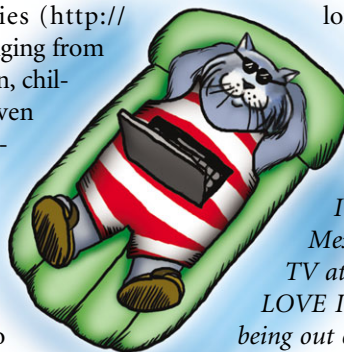
MAXIMUM PERFORMANCE

NOMINAL PRICE

Now take advantage of the superior performance of AOpen's® new 8X DVD +/- RW drive at an amazing price!

AOpen — the world's leading PC component manufacturer — has pulled-out all the stops with this new feature-loaded, dual-format DVD burner. It not only writes both DVD+R and DVR-R media at true 8X speeds, it also serves as a handy, fast and convenient CD media writer and player. It may be a record-breaker, but there's one thing the DWR8800 DVD Burner is NOT, and that's a budget-breaker.

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TV Tome Brings Telly Trivia To You

Your Online Guide To TV Shows In The Past, Present & Future

IT HAS HAPPENED to almost all of us at least once. You get that niggling, maddening feeling as you're watching television and ask yourself, "Where have I seen that actor before?" The face is familiar, but you just can't place it, and you don't know where to look for answers. Well, those days are over. You'll no longer wonder about "The Wonder Years," be a novice concerning "The Apprentice," or not know the skinny on "My Big Fat Obnoxious Fiancé," thanks to the TV reference guide and Web site called TV Tome.

The TV Tome site is to television what IMDb (Internet Movie Database) is to movies; it's a comprehensive online resource for current and past episodic TV shows (no talk shows or soap operas yet) along with a preview of future shows. TV Tome carries in-depth guides on specific programs, presents previews on series development, and provides a meeting place for trivia buffs,

TV-aholics, and the simply curious who want to exchange information or learn obscure facts. To see what it's all about, tune in to http://www.tvtome.com on your Internet dial.

The Prime-Time Lineup

TV Tome is well-organized and easy to navigate, which is obvious right from the start on the home page. The left side of the page presents its own style of navigation "bar," which includes four miniature TV sets displaying text links; the categories fall broadly into individual guides, overviews and reviews, fantasy television, and information about the site. The center of the page features recent episodes and pertinent facts about the site, and the right side of the page carries quick links to the evening lineup and user profiles.

The heart of TV Tome is its collection of more than 4,500 guides to

current and classic shows—about 1,700 of them are fairly complete, with another 2,800 in development—so we'll begin our tour of the site there. From the home page, click the All Shows link in the top left TV icon, and scroll down the list until you've located a show you want to know more about. If you're lucky, the show name will be in bold print, indicating a more complete guide. Regardless, TV Tome presents all shows in the same format.

Here at *Smart Computing*, some of us happen to be "Law & Order" fans, so we chose to visit the "Law & Order" guide to show you a typical guide's content and layout. Click the show's link, and you'll see a page that mirrors the TV Tome home page, with TV icons on the left for navigation (General Info, Indepth, Current Episodes, and Resources) and the General Info main content in the middle. Naturally, the guide begins with an introduction, which contains an overview of the series and interesting facts. Question: Who is Steven Zirnkilton? Answer: He's the voice behind Law & Order's opening narration.

Scroll down a bit, and you'll see a brief section highlighting basic facts about the show, such as when it first aired (October 1999), its status (series renewed through 2005-2006 season), its running time (60 minutes), the country (United States), and when and where it currently appears (Wednesdays, 10 p.m. Eastern Time on NBC). Following this section is a list of the show's stars and crew; click a name to view detailed information. Plus, you'll find show news and notes as well as links to longer articles.

Although all of this information is interesting, it's the Indepth section we find fascinating. This is where you'll find answers to those burning questions, such as who played that minor character in that single episode. Not only does this section list every single episode number, airdate, and title, but each episode title carries detailed information about its synopsis, guest stars, notes, and more. And occasionally, you'll find memorable

quotes, such as the dialogue in this season's finale between the retiring, "three-times-single" detective Lenny Briscoe and his female lieutenant:

Briscoe: "So what's it been for you and me . . . 11 years?"

Van Buren: "Something like that."

Briscoe: "It's the longest I was ever with *any* woman."

Van Buren: "Now that's pitiful."

There's an area of the Indepth section that's so popular it has its own listing on the TV Tome home page. The Reviews cover entire series, individual episodes, and the miscellaneous story, such as the WB's upcoming fall schedule. Click the Episode Reviews link within a series guide or click the Reviews link at the top of the home page (and other pages) to view the entire index of reviews.

See one that looks interesting? We thought Key Battles To Look At Next Season was, and its content rewarded us with a head-to-head comparison of shows in the toughest time slots this fall. It laid out viewing conflicts for devoted TV watchers (such as "CSI" or "The Apprentice") and made some interesting predictions.

In addition, you can jump to a particular show's recent episodes, typically the last two or three, by bypassing the

Individual guides provide the lowdown on such shows as "Highlander."

episode list and going directly to the third TV icon on the left side of the guide page. And, if that isn't enough for you, visit the resources area for links to external Web sites, as well as books, posters, collectibles, and more at TV-related merchant sites.

Appear In The Credits

While viewing the episode guides, you may have noticed that the top of each section features two small symbols, a plus sign (+) and a pair of scissors. These are just two of the ways you can contribute to the site. Clicking the plus sign lets you input show information, and clicking the scissors sign lets you edit information, provided you have the proper permission. To do either, however, you'll first need to register on the site.

Click a link on the right side of the home page to display a registration

Highlander

Intro

Welcome to the **Highlander** guide at TV Tome.

"He is Duncan MacLeod. . . the Highlander. Born in 1592 in the highlands of Scotland, and he is still alive; he is Immortal.

For 400 years, he's been a warrior. . . a lover. . . a wanderer. . . constantly facing other Immortals in combat to the death. The winner takes his enemy's head-- and with it, his power.

"I am a Watcher, part of a secret society of men and women who observe and record, but never interfere. We know the truth about Immortals-- in the end, there can be only one. May it be Duncan MacLeod. . . the Highlander."

Related Series:
Highlander: The Raven
Highlander: The Animated Series

Show Information

Also known as:	Highlander: The Series
First Aired	October 1992
Last Aired	May 1998
Status	Canceled/Ended
Running Time	60 min
Country	United States
Network	Syndicated

Show Stars

Philip Akin - Charlie DeSalvo (1993-1994)
Jim Byrnes - Joe Dawson (1993-1998)
Elizabeth Gracen - Amanda Darieux (1994-1998)
Lisa Howard - Anne Lindsey (1994-1995)
Stan Kirsch - Richie Ryan
Adrian Paul - Duncan MacLeod
Alexandra Vandernoot - Tessa (1992-1993)
Peter Wingfield - Methos
Amanda Wyss - Randi MacFarland (Season 1)

GENERAL INFO
• Intro
• Info
• Stars
• Crew
• News

INDEPTH
• Episode List
• Episode Guide
• Goofs Guide
• Cast Guide
• Crew Guide
• Forum

RESOURCES
Shop for Highlander stuff!
Find videos, posters, books, collectibles and more in our shops
Links to related web sites about this show ::
More Links

form. This form asks you to create a username and password and enter an email address. You also have the option of filling out a user profile so others who visit the site can read about you. Once you've registered, return to the site guide and click the plus sign. Now you can submit photographs of your favorite "CSI" actor, provide summaries and links about "The Dead Zone," or add news and notes on "The Simpsons" for review by a TV Tome editor.

Each show has a lead editor, who has permission to edit all sections of a show guide and oversees the process of accepting and editing user contributions. If you like the sound of "Your Name, Lead Editor," head to the home page and click the About TV Tome link. Then, click the Become An Editor link and follow the instructions. You also can sign on to be an editor for a particular person, which makes you responsible for the information about an actor or actress, or you can choose to be a co-editor if the show you want to edit already has a lead editor. Editors can click the scissors signs to update show profiles.

In addition, you can contribute to the site by becoming a critic or reviewer. Although some of the reviews

Tips For Using TV Tome

- **Find the hidden FAQs.** The Webmaster is working on adding FAQs (frequently asked questions) to the site, but until then, you can find plenty of answers to FAQs in the general forums. Click the Forums link on the home page and click the About TV Tome forum. Here you'll learn, for example, that the co-star listing refers to a minor character, and that's why the cast guide doesn't include co-stars.

- **Don't get locked out.** Can't add to a forum discussion? When a forum thread strays too far off-topic, the Webmaster closes it down, which you'll see represented by a tiny lock icon. By design, you can't add to a locked thread.

- **Mind your A's and The's.** The search engine works well, but we should warn of some minor points. When you enter a show's name with "The" at the beginning and the engine doesn't find a match, it'll remove the "The" and try to find a match that way. But this rule only applies at the beginning of a show name, so "Magic: Gathering" will not match "Magic: The Gathering." Similar rules apply to the use of "A," "An," "&," and "And."

we mentioned earlier are written by outside sources, some are created by TV Tome site visitors. These volunteers write featured reviews of each episode of a given series or provide commentary on a show as a whole. TV Tome also is in the process of adding columnists and interviewers, who will write pieces on TV-related topics or interview players within the industry.

Even if you don't want the responsibility of being an editor or reviewer, you can still contribute to the site via the TV Tome forums. The Webmaster has created general forums for discussing the site as well as specific forums for each show. To participate in the former (after registering, of course), click the Forums link on the home page and choose any of the five forums: About TV Tome, Current TV Shows, Classic TV Shows, The TV Industry, and Members Lounge.

Keep in mind, though, that these are general forums only. For instance, under Current TV Shows, you'll find discussions on the top 10 least favorite shows of all time. (Based on the postings, many site visitors think "The Pitts" was aptly named.) If you want to discuss specific shows, you won't find these particular forums via the home page. Instead, visit a specific show's guide page and click the Forum link in the Indepth section.

Specials, Previews & Games

You'll find plenty of information about current and past shows in the guides, but don't let that fool you into thinking this site doesn't look into the future. TV Tome also offers insights on new shows, including analysis on why some shows failed or will fail and why others will continue to run.

Start with Fall Schedule Predictions located on the home page and choose a network link, such as CBS, to read about which shows are up in the ratings ("CSI") and which shows are down ("Yes, Dear"). The comments are subjective—not every reader will agree

that CBS' primetime Tuesday is "one of the most successful nights on TV and shouldn't be fooled with"—and that adds to the fun. Then, move on to the 2003/2004 Roundup to learn which shows have been canceled and why, according to the site insiders. Some of the comments ("This horrid show should have never seen the light of day. The public was inflicted with only 6 episodes.") may even make you wish you caught now-cancelled shows such as "The Mullets."

Be sure to check out the Shows In Development link from the home page, too. TV Tome lists about 150 shows here, with as much information as its editors could dig up. You'll learn about Sylvester Stallone's boxing show, the plot of "We Are Family," and the latest project by Jessica Simpson.

Ready for a little action of your own? Then play Fantasy TeeVee, a free game based on TV characters. Click its link on the TV Tome home page to head to Fantasy TeeVee's site, where you become an executive producer of your own network. Draft a cast of your favorite characters and create a lineup so you can match your lineup against another network executive, be it a friend or a stranger. If you outperform your opponent, you become the winning producer.

Finally, we'd like to point out the miscellaneous features grouped under the fourth and final navigation section of the home page. About TV Tome and Advertise On TV Tome provide you with a look at what goes on behind the scenes, including demographic data and the Webmaster's vision of the site's future. If you notice an error on the site, feel free to use the feedback form. You also can click other links—TV Related Merchants, TV News, Other TV Sites, and TV People—to visit TV resources not hosted by TV Tome.

Get Hooked On TV Tome

TV Tome is a site that you can spend hours browsing or researching, and how you use it—for entertainment or

education—is up to you. Sound familiar? Many of us watch television in the same way. ▐

BY HEIDI V. ANDERSON

FACT SHEET

TV Tome

You might guess that John Nestoriak, the creator and Webmaster of TV Tome, is a TV junkie, or a TV executive, or even a former child actor. You'd be wrong. Although it was programming that got Nestoriak excited about founding TV Tome, it wasn't TV programming. In fact, he doesn't even have a favorite series, although he does admit to being a fan of "Buffy the Vampire Slayer."

"I'm a computer programmer, and I wanted to work with Java servlets," Nestoriak says. "TV Tome is based on sites I had seen and liked earlier—sites that are automated and database-backed."

Nestoriak began working on the site in 1999, and he launched it in 2000. About a year later, he teamed with some of the developers of epguides.com, who agreed to allow TV Tome to import their guides. Today, the site numbers thousands of visitors, most of whom enter TV Tome not through the home page but instead via search engines or bookmarked pages. About 70% of them are from the United States, 15% are from the United Kingdom, and a smattering are from countries that don't consider English as their primary language, such as Japan.

Nestoriak intended for others to read "TV Tome" as two words, with "tome" referring to a large scholarly work, but some visitors assume it stands for "TV To Me," a logical interpretation, given that detailed show guides bring each series close to the visitor. Call it what you will; we choose to call it one of the most useful TV resources on the Internet. ▌

Speedy Surfing With RSS

Get The Web Content You Need When You Need It

IT'S A PARADOX that as the Internet has grown to include more information than ever before, using it effectively has become more challenging. Sure, search tools such as Google help you find information about a myriad of topics, but the average user is drowning in a sea of Web sites scattered through his browser's bookmark collection. If you visit dozens of Web sites on a daily basis, you can easily spend more time getting to the sites than reading their content. Fortunately, there's a revolution brewing on the Web, and its name is **RSS** (**RDF Site Summary**; RDF is short for Resource Description Framework).

RSS is an attempt to organize and expedite the delivery of Web content to you. Although RSS began in 1999, it didn't really start to take off until this year. And in contrast to the "push" technology epitomized by PointCast, which also promised the moon, RSS is a resource-friendly technology that doesn't try to choke your computer with a deluge of data.

How It Works

In a nutshell, RSS works by having a client program (frequently called an **aggregator**) on your computer ask a Web site for an RSS **feed**. This feed, often published in an XML (Extensible Markup Language) file, usually lists the site's headlines along with summaries of the articles. A Web site that wants to publish a feed simply needs to create this type of file and post it on its site. That way, when a new article appears on the site, the site's feed automatically updates to reflect the change.

To access the feed, you need an RSS client that can retrieve this type of file and read its content. There are stand-alone clients that run on your desktop computer, or you can use a Web-based client. Most RSS clients let you configure the rate at which they check the sites you subscribe to for new content.

After you "subscribe" to a feed, most clients display each feed's headlines, summaries, and links to articles on the originating Web page. You can either view an article through the client's interface or click the article's link to view it in your preferred browser's window.

What's Being Served

Who's publishing RSS feeds? Accurate estimates of the total number of syndicated sites are hard to find, but Syndic8.com (http://www.syndic8.com), a clearinghouse for RSS sites, is adding about 12,000 new sites per month, with a current list of more than 100,000.

Feeds don't always reflect the entire contents of a site. For example, *The Washington Post*'s site (http://www.washingtonpost.com) features 13 feeds ranging from World News to the 2004 Election. Other sites may only list the main articles posted. Feeds also are handy for nontraditional news, such as recall information from government agencies. And if you're an iTunes junkie who likes to keep track of Apple's latest music releases, there's an RSS feed for you, too. Or if you're an avid follower of this year's election, subscribe to John Kerry's RSS feed and stay current on the race. Finally, if you just can't miss a single day of Dilbert, you can catch each day's comic strip by using an RSS feed.

Find Your Feed

Now that you've decided that this newfangled RSS thing might be what you've been hoping for since you first discovered the Web, it's time to find the feeds you need. Most sites that are veterans of publishing RSS feeds make it easy to subscribe by putting a small orange-colored icon on their Web pages. Typically labeled "XML" or "RSS," these icons are links to XML files that contain RSS data.

After you find an RSS icon, right-click it, copy the link onto your Clipboard, open your RSS client, click Subscribe, and paste the link into the **URL** (**uniform resource locator**; a Web address) field. That's it; you're now a subscriber to the site's feed. Some sites require registration, which usually only involves demographic data, and the majority of these sites offer RSS feeds at no charge.
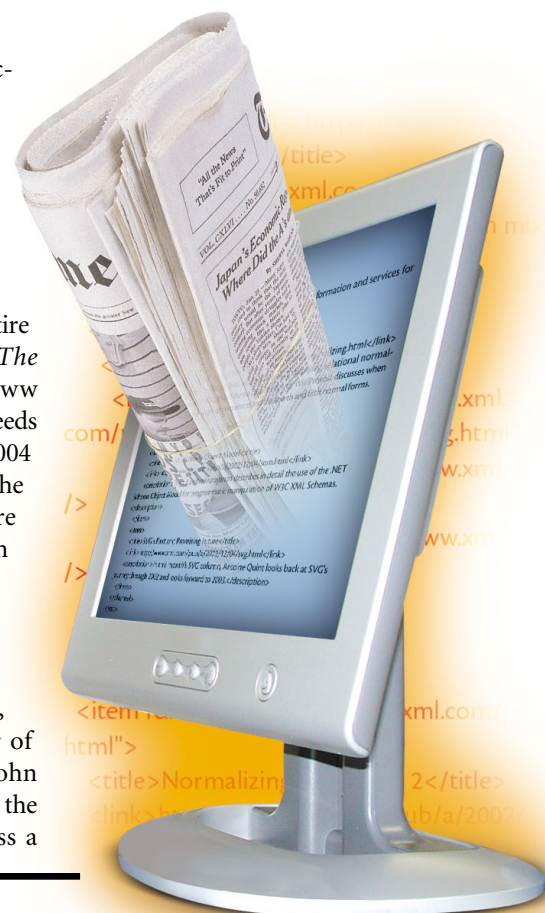
But not all sites make becoming a subscriber this easy. Some bury the links deep within their sites or don't advertise RSS feeds. This is where savvy RSS clients have stepped up to make subscribing easier. All these clients need is the URL of the target site, and they'll scan the entire site for a feed.

If you want help from a few friendly sites, visit Syndic8.com or NewsIsFree (http://www.news isfree.com). Using these sites, you can search for RSS feeds you probably never imagined were available. Most clients also come prepopulated with feeds.

Installed Or Web-Based?

Although client aggregators are all the rage (see our "RSS Clients" sidebar for examples), there's competition brewing
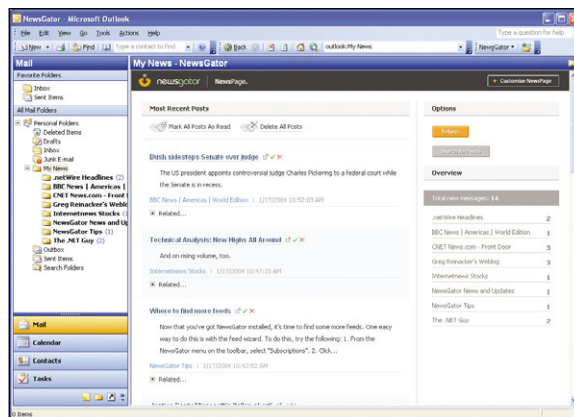
NewsGator plugs into Microsoft Outlook for a one-stop Web experience that's convenient for users.

for your RSS attention. Portal sites such as Yahoo! (http://www.yahoo .com), as well as Syndic8.com and NewsIsFree, offer Web-based RSS tools. Using these tools is as simple as customizing your preferences to reflect the feeds you'd like to subscribe to.

In addition to portals, there are a host of sites, such as Fastbuzz (http://www.fastbuzz.com), which specialize in free, Web-based RSS aggregation. With a Web-based aggregator, there's no software to download and install, and you can use it on any computing platform.

Your Personal Internet

Part of the attraction of RSS is that it's a natural evolution of the Web that doesn't require users to learn esoteric commands or arcane terminology. With the advent of RSS, you can optimize your online time, so download an RSS client and find out what this brave new world is all about. ▮

BY CHRIS JACKSON

RSS Clients

Choosing an RSS (RDF Site Summary) client that has the features and performance you need can be a challenge. To make it easier, we assembled a selection of available clients for PCs, Macs, Pocket PCs, and Palm OS devices.

PCs

FeedDemon. If you want a standalone client, you'll find that FeedDemon from Bradbury Software (http://www .bradsoft.com) is one of the best RSS clients for Windows. FeedDemon features autodiscovery, so you can use it to scan sites for RSS feeds. FeedDemon is $29.95 and has a free 20-day trial version.

NewsDesk. Created by David Peckham of Wildgrape, NewsDesk (http://www.wild grape.net) has an element that makes it the ideal Windows client: NewsMenu,

which lets you view your headlines from an icon in your System Tray. Simply right-click the icon, and you'll see a list of the latest headlines from your favorite sites. To use News-Desk, you'll need to have Microsoft's .NET Framework 1.1 installed. Best of all, NewsDesk is free.

NewsGator. NewsGator from NewsGator Technologies (http://www.newsgator.com) is a robust client that works with Microsoft Outlook. Like FeedDemon, NewsGator also features auto-discovery. It costs $29, but you can download a free 14-day trial version.

NewzCrawler. Combining support for RSS and Usenet newsgroups, NewzCrawler from ADC Software (http:// www.newzcrawler.com) presents news from multiple sources in one consistent interface. If you're comfortable

with the look of Outlook Express, you'll feel right at home with NewzCrawler. You can download a free trial version, but once it expires after 14 days, you'll have to pay $24.95 to continue using it.

SharpReader. For a free app, SharpReader from Luke Hutteman (http://www.sharp reader.com) has one of the cleanest interfaces of any RSS client we evaluated. The performance wasn't as zippy as others, but this should improve over time.

PDAs

Hand/RSS. Hand/RSS from Stand Alone (http://www .standalone.com) is a Palm OS-compatible RSS client that can retrieve your favorite headlines when it has access to an Internet connection. Hand/RSS is available for $14.95 and has a free 30-day

trial version. The client requires Palm OS 3.0 or newer.

PocketRSS. If your PDA of choice is a Pocket PC, head over to AtomicDB.com (http://www.atomicdb.com) and download PocketRSS. You can try a trial version of this RSS client for 15 days and then pay $5 to register it. It requires Pocket PC 2002/2003.

Macs

NetNewsWire. If your computer is a Mac, you won't find a better RSS client than Ranchero Software's NetNewsWire (http://www .ranchero.com). NetNewsWire has an elegant interface that will make you wonder how you survived without RSS and this sublime client. NetNewsWire retails for $39.95; a fully functioning 30-day demo version also is available. ▮

Beware Of Spyware, Adware & Sneakware

Learn How To Combat & Eliminate These Annoyances

IN THE GOOD OL' DAYS, "I Spy" was either a child's game or a delightful, tongue-in-cheek TV series starring Bill Cosby and Robert Culp. Today, the term "spy" takes on more ominous overtones as all computer owners with Internet access—especially those with broadband connections—are subject to the cruel consequences of spyware, sneakware, and adware.

You're Not Alone

Let's first distinguish among these three terms. **Spyware** is software installed on your computer without your knowledge or explicit permission and serves some nefarious purpose. In general, spyware gathers confidential information from your computer and automatically transmits it back to the individual or organization that planted it on your computer.

An example of spyware is a **keystroke logger,** which is a program that runs in the background on your computer and records every keystroke you make. In other words, a keystroke logger is the electronic equivalent of somebody looking over your shoulder as you type. Armed with this information, a cracker or criminal organization can steal your Social Security number, credit card numbers, bank account numbers, and anything else you type and enter into your computer, regardless of whether this information is part of a document on your hard drive or in an online form. There are

some arguably legitimate uses for keystroke loggers, such as a parent monitoring a child's Internet activity, but the illegitimate uses pose a serious identity-theft threat.

Although crackers use spyware to steal confidential information, in many cases it's incorrect to blame crackers for installing spyware on your computer. If you have a spyware problem and want to know who to blame, you'll probably find the culprit by looking in the mirror. That's because you may have unwittingly installed spyware on your computer by downloading and installing freeware that serves as a Trojan horse for spyware.

If your browser's security settings are not configured properly, the simple act of visiting a particular Web site also can automatically install spyware on your computer. This type of infiltration is known as a **drive-by download**.

Adware, on the other hand, is software that gathers information about your Web-surfing habits in order to target you with pop-up advertisements for products and services that might be of interest to you. Unlike spyware, adware is installed *with* the user's knowledge and permission, usually in exchange for software that's free but supported by advertisers. An example of adware-supported software is Sharman Networks' Kazaa, the popular peer-to-peer, file-swapping application.

Although adware is generally more benign than spyware, it can still be quite intrusive. In fact, some anti-adware zealots have modified Kazaa in order to develop an adware-free version that they can download and install. The irony here is that many people believe Sharman Networks is fully aware that people use Kazaa to download copyrighted material, but when anti-adware zealots decided to develop an adware-free version of Kazaa, they violated Sharman Networks' own copyrights. But the ultimate backlash against Sharman Networks is that Kazaa has experienced a decline in users, not just because of legal, competing music services, but because of reports about the malicious code contained in the free files Kazaa collects. A recent analysis by TruSecure, a security and risk management firm, estimates that 45% of the free files collected via Kazaa are viruses, Trojan horses, and/or spyware.

Sneakware uses deceptive means to sneak onto your computer. In theory, the user is still granting permission for the software to be installed, but the user is often *unaware* he is granting permission. This is because said permission is buried deep within the terms and conditions of an application that contains the sneakware—terms and conditions the software developer hopes you don't take the time to review.

Another sneaky thing about sneakware is that the vendor often tries to fool naïve users into thinking they are at risk if they don't install it. For example, as you're Web surfing, you may see a pop-up dialog box labeled "Security Warning" suddenly appear on-screen. The "Security Warning" label is intended to convince you that you *must* install the app it suggests to protect your computer from the very type of software that will be installed if you click Yes to approve the installation. Recently, we've come across sneakware so deceptive in this regard that if you decline to install the software, a second pop-up dialog box states, "You must click Yes to install," or "Download ABORTED. You must click YES." At this point, many people are no doubt scared, fooled, or confused into installing the sneakware.

Unlike adware, which tracks browsing activities and delivers pop-up ads, sneakware often makes changes to your system. You might find these changes in the small print of the terms and conditions, but the sneakware vendor hopes you don't read them. Typical changes include hijacking (changing) your home page, changing your default search engine, adding a toolbar to your browser interface, deactivating other browser toolbars, and adding pornographic bookmarks to your browser. Don't bother trying to undo these changes because the sneakware will either prevent you from doing so or automatically reapply the changes.

Dangers Lurk Everywhere

Some of the dangers of spyware, such as identity theft and financial fraud, are obvious, but there are other serious problems associated with spyware, adware, and sneakware.

First, these applications steal your bandwidth, slowing down your Internet connection. Adware is especially harmful in this regard, using your bandwidth to pepper you with unwanted pop-up ads. These applications also steal your bandwidth by transmitting data to and from your computer over the Internet.

Second, these apps may cause sluggish performance on your computer because they are always running as background processes. This means they are using your computer's processor,
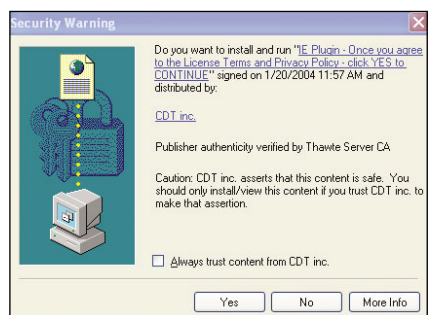
Beware of dialog boxes that try to trick you into installing sneakware, as this one does.

memory, and resources just like any other open application.

Third, sneakware may replace your home page with one that contains adult and/or sexual material, which is especially distressing when children use your PC and see this type of content.

Last, these applications often contain bugs that can cause your system to crash.

How Secure Are You?

Antivirus applications and firewalls often give users a false sense of security, especially with respect to spyware (although adware and sneakware are also problems in this regard). Even though antivirus applications will stop some Trojan horses that contain spyware, they aren't 100% effective because spyware technically isn't a computer virus.

Firewalls can stop crackers, but they won't stop you from downloading and installing a Trojan horse application. Nor can they stop drive-by downloads because firewalls only prevent *unauthorized* access to your system. When you contact a site that downloads spyware, you have in effect authorized communication with that site. A firewall cannot distinguish between good and evil types of communication. So, basically, firewalls stop crackers who try to initiate unauthorized contact, but they can't protect you from yourself.

However, a good firewall—one that monitors both inbound and outbound communications from your computer—can alert you after the fact that spyware, adware, or sneakware has been installed on your computer. Because all of these malicious applications try to send information about you back to the company, individual, or organization behind the spyware, adware, or sneakware, firewalls are configured to notice this type of behavior. The first time one of these applications attempts to transmit information, your firewall will display a pop-up window informing you that a new application is trying to access your Internet connection; if you don't recognize the name of the application, you may have spyware, adware, or sneakware on your computer.

The current version of ICF (Internet Connection Firewall), the free firewall that comes with Windows XP, doesn't monitor outbound communications and, therefore, won't detect spyware, adware, or sneakware when it attempts to send its booty out over the Internet. But another popular and effective free firewall, ZoneAlarm from Zone Labs (http://www.zonelabs.com), does monitor outbound communications.

Who's behind the thousands of spyware, adware, and sneakware versions? For the most part, legitimate companies are behind adware and sneakware, and their motive is profit (even if they have to use deception for monetary gains). The origins of spyware are more sinister. The popular perception that kids and individual crackers are behind spyware is probably false, says Roger Thompson, vice president of product

development for PestControl, an anti-spyware company.

"In February alone, 29 versions of one spyware program were unleashed, and these programs exploit all of Microsoft's vulnerabilities," Thompson says. "A considerable amount of resources are required to release so many variations of spyware and exploit all of these vulnerabilities, and this points to the possibility that organized crime is involved. These people are skilled at working below the radar of law enforcement and are very difficult to catch."

Detection & Removal

An anti-spyware software industry has emerged to help users detect and remove spyware, adware, and sneakware from their computers. The anti-spyware industry has not yet adopted the antivirus software industry business model of providing a memory-resident scanner that inoculates your computer against spyware, adware, and sneakware, but it is moving in that direction.

Currently, most anti-spyware products scan your computer and detect spyware, adware, and sneakware *after* it has already been installed. Three popular anti-spyware products are Lavasoft's Ad-aware (http://www.lavasoftusa.com), Spybot Search & Destroy (http://www.safer-networking.org), and Pest-Patrol (http://www.pestpatrol.com).

Although market share statistics are unavailable, Ad-aware is immensely popular because the standard edition of the product is free. The two premium editions, Ad-aware Plus ($26.95) and Ad-aware Professional ($39.95), provide Lavasoft with the revenue stream necessary to support the free version. (This is similar to Zone Labs' business model for its ZoneAlarm firewall product line.) Spybot Search & Destroy, developed by Patrick M. Kolla, also is free, but donations are encouraged. PestPatrol, from PestPatrol Inc., costs $39.95 for a home user license, but a free evaluation version also is available.

After you install an anti-spyware product on your computer, you should perform weekly scans of your hard drive. You also must keep your product updated with the latest reference/signature files so it detects the most recent spyware, adware, and sneakware versions.

One of the problems associated with spyware detection is that legitimate programs may be used for illegitimate purposes. "So much of spyware detection is context-sensitive," says Thompson of PestPatrol. "Programs such as Symantec's pcAnywhere and Ethereal [an open-source network-analysis tool] can be put to legitimate or illegitimate uses. When we find these products on a computer, we have to leave it up to the user to determine whether or not they should be there."

Tread Carefully

Here are some important tips for keeping your computer free of spyware, adware, and sneakware.

Use antivirus software and keep it up-to-date. Antivirus software products block some Trojan horses that contain spyware, so make sure your antivirus application is current.

Install a firewall. Install a good software-based firewall that monitors both inbound and outbound communications from your computer so it can alert you to the fact that spyware, adware, or sneakware has been installed. We also suggest that you use some type of residential gateway, such as a router, to offer hardware-based firewall protection. But remember: The firewall can only stop crackers; it can't stop you from unwittingly installing spyware on your computer.

Install anti-spyware and stay current. Install anti-spyware and run regular scans of your hard drive in case something slips through. Keep the anti-spyware up-to-date with the latest reference/signature files or it will become as useless as out-of-date antivirus software.

The small print in the terms and conditions of this application reveals that sneakware will change the user's home page, install bookmarks leading to adult and/or sexual content, and deactivate browser toolbars.

Properly configure your browser's security settings. This is particularly important if you're using Internet Explorer as your Web browser. IE has a "feature" that lets software automatically install on your computer. To disable this feature and stop drive-by downloads, change your IE security settings. Launch IE, click Internet Options from its Tools menu, click the Security tab, and click the Custom Level button. From the next dialog box, look below the ActiveX Controls And Plug-ins heading and set the options as follows:
• Select the Prompt radio button below Download Signed ActiveX Controls
• Select the Disable radio button below Download Unsigned ActiveX Controls

- Select the Disable radio button below Initialize And Script ActiveX Controls Not Marked As Safe
- Select the Prompt radio button below Run ActiveX Controls And Plug-ins
- Select the Prompt radio button below Script ActiveX Controls Marked Safe For Scripting

Alternately, you can use a more secure Web browser that isn't as susceptible to drive-by downloads, such as Opera 7.51 (free version includes banner ads, $39 version is ad-free; http://www.opera.com) or Mozilla 1.6 (free; http://www.mozilla.org).

Back up your hard drive every day. If your PC becomes infected with a new spyware, adware, or sneakware version, your anti-spyware may not be able to detect and remove it. But if you have a recent backup of your hard drive, you'll be able to restore your system to its pre-infected configuration.

Beware of freeware. Before you install freeware on your computer, check the application's pedigree. Surf the Web for product reviews and read the software's terms and conditions before installing it to be certain it doesn't contain any unwanted baggage.

Just say, "no." Click No or close all pop-up windows that want you to install some type of extra application, such as a browser plug-in you've never heard of before. Such applications almost always contain sneakware. Remember: You may have to say "no" several times before you can escape the clutches of the sneakware vendor.

Watch out for the most pervasive adware. Don't install Xupiter, Bonzi-BUDDY, Comet Cursor, or Claria products such as Gator eWallet, Dash-Bar, or Precision Time on your system unless you believe these applications add so much value that you are willing to put up with the effects of the bundled adware.

Don't trust adware uninstall programs. Some adware versions have an uninstall program that displays when you click the Add Or Remove Programs icon in Windows' Control Panel.

Unfortunately, the adware uninstall program may remove the core application (the useful utility that came bundled with the adware) but leave the adware components behind to continue monitoring your activities. Unless you know how to edit your Windows Registry to manually uninstall the unwanted components, the only safe way to remove spyware, adware, or sneakware is to use anti-spyware.

The Name Game

As we indicated, there are distinct differences between spyware, adware, and sneakware; however, it is becoming increasingly common for security experts and writers to use the term "spyware" to generically refer to all three types of software. Other generic names, such as "malware," have also emerged. The tendency to group all of these malicious applications together under one generic name stems from the fact that the lines separating these applications are blurring.

For example, Xupiter is adware that sometimes asks for permission to be installed and sometimes installs itself without permission via a drive-by download, the latter of which better fits the definition of spyware.

Recent attempts to pass federal anti-spyware legislation have been detoured by the difficulty in coming to an agreement over an acceptable definition for spyware.

The name game has even caused one anti-spyware company, Lavasoft, to stop using the terms altogether. Instead, it gives each piece of offending software a threat assessment rating. As a result, Ad-aware detects any software with a rating of 3 or higher. You can enter the name of a particular application on Lavasoft's Web site to find its threat assessment rating, along with a detailed explanation of the rating. <sigh> If only things were again as simple as the good ol' days of "I Spy." ▮

BY ALAN LUBER

Sue Me, Sue You Blues

Not surprisingly, the spyware/adware/sneakware industry is rampant with litigation. Several companies have sued adware companies for allegedly infringing on their Web sites. For example, the United Parcel Service has sued Gator for displaying FedEx pop-up ads when users visited the United Parcel Service Web site. Weight Watchers International has filed similar lawsuits involving Gator pop-up ads.

A group of publishers, including owners of *The Washington Post, The New York Times,* and *USA Today,* also sued Gator. Their complaint alleged that Gator is "a parasite on the Web that free rides on the hard work and investments of Plaintiffs and other website owners. Gator makes money by placing advertisements for third parties on the Plaintiffs' websites without Plaintiffs' authorization." This lawsuit was settled out of court, with the outcome sealed from the public.

Adware companies also have been the target of class action lawsuits for using deceptive practices. Last year, Bonzi Software was sued for the deceptive practice known as FUIs (fake user interfaces). For example, Bonzi was using the "x" in the upper-right corner of some of its windows as a button that directed users to commercial Web sites instead of using "x" to perform the normal function associated with it—that of closing the window. In the settlement, Bonzi agreed to discontinue the use of FUIs in this manner.

Adware companies have been striking back with lawsuits of their own. For example, Gator sued PC Pitstop (http://www.pcpitstop.com) for referring to its software as spyware instead of adware. The suit was settled out of court when PC Pitstop made changes to its Web site that satisfied Gator. ▮

Enhance Your Time Online

Build Sites For The (Super) Small Screen

With the rising popularity of software products such as Adobe's GoLive and Macromedia's Dreamweaver, Web site development isn't the coding challenge it once was. But if you've ever seen a Web page on the tiny screen of one of these new, wireless, Internet-enabled handheld devices, you probably wanted to scream. Webmonkey is a great source for finding articles and tips for all kinds of Web design challenges, but its article about dealing with small screen issues (http://hotwired.lycos.com /webmonkey/04/12/index4a .html) is particularly helpful. Of course, if you still have some questions about more traditional site building, Webmonkey organizes its articles by Beginners, Builders, and Masters, so you're sure to feel right at home when you work on your home page.

Convert PDFs Into Web Pages

The use of Adobe's PDF (Portable Document Format) file format continues to grow, and although there are lots of reasons why people convert their documents into PDFs, accessing these files online can sometimes slow down the most productive of Web surfing sessions. Adobe seems to recognize this need and now has a handy but well-hidden form that converts an online

PDF into **HTML** (**Hypertext Markup Language;** the code used to create Web pages). So, when you're Web browsing and come across information in a PDF that you think you might want, consider visiting Adobe's converter at http://www.adobe.com/prod ucts/acrobat/access_simple_ form.html. Sure, Google (http://www.google.com) has this type of function on its results pages that contain PDFs, but now you know how to convert those pages that you find yourself.

The Time Value Of Money

If I had a dime every time someone told me that saving for retirement is important because of compound interest, I would probably have enough money to retire by now. But really, how much do you have to put away? How large do you want your nest egg to be when you end your work career? If you don't have a financial calculator handy (or if you wouldn't know how to use

What may look like a boring online form actually can save you a lot of time by calculating interest charges, payments, and future earnings.

one if you did), go to this online utility for calculating the time value of money (http://people.hofstra.edu /faculty/stefan_waner /realworld/tmvcalc.html). Here's the real killer tip: Use this utility to calculate how to get out of credit card debt by entering a future value of zero and a present value of your current balance.

Microsoft File Viewer/Converter

Getting someone to open a Microsoft Word file that you sent her isn't nearly as difficult as it once was (certainly not like in the days of Word vs. WordPerfect). Sure, many people own Microsoft Office, but what

do you do when somebody doesn't have that particular software package? Of course, you might be more likely to run into this kind of problem if you send someone a Microsoft Visio document, but either way, it's good to know that Microsoft has a page on its site that features converters for opening files created with different versions of Office (http://www .microsoft.com/office/000 /viewers.asp). You'll find viewers on this page that allow folks who don't have any version of Microsoft's programs to see your work.

Division In The Kitchen

If you've spent any time in the kitchen, you know it's frustrating when you find a perfect recipe that serves eight people but you're cooking for only two or three people. Halving a recipe isn't difficult, but dividing it by quarters and thirds is more troublesome . . . unless you have a recipe conversion calculator. And that's where we come in; you'll find a simple online tool that can help at http://kmiller.ecorp.net /recipe. Bon appétit!
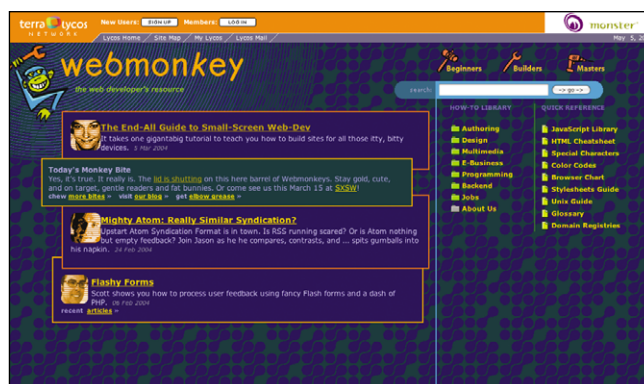
Don't let complex Web site design problems make a monkey out of you. Let Webmonkey be your guide.

Take Your Hobby To The 'Net

Crafts

http://www.i-craft.com

The Hobby Industry Association's aptly named Crafts Web site has hundreds of projects that range from the easy to the complex. Most projects, such as Sluggo The Snail, require only a few easy-to-find components. Each craft features step-by-step instructions and diagrams that walk you through the project, which means that even newcomers can create handsome snail key chains and wire-wrapped candles. The Web site has a large General Crafts section but also features a Kids' Corner and a Senior Center, both of which have additional projects. Oddly enough, you'll need to enter your email address when you enter a Crafts' section. Crafts doesn't have an online store, but it lists many online retailers and mail-order catalogs, and it has a search engine that lists local craft retailers.

EnchantedLearning.com's Crafts For Kids

http://www.enchantedlearning.com

Looking for some kid-oriented craft projects? Visit the Enchanted-Learning.com Web site and click the Crafts icon. You can browse the lengthy list of project topics alphabetically or, if you're planning to use (or avoid) certain products, you can search for projects by material. Most of the projects require household materials, such as flour (for papier-mâché), toilet paper roll tubes, and newspaper. Our favorite project, the Balloon Ghost, requires only a balloon, tape, and plastic bags. Of course, EnchantedLearning.com has much more than project instructions. The site has tons of interesting facts and photos for young children.

Hobby Lobby

http://www.hobbylobby.com

If you have a Hobby Lobby in your area, you probably already know that it has a wide range of products, including craft materials and components for RC (radio control) devices. Hobby Lobby's Web site offers information about gift certificates, store locations, and in-store classes, but it doesn't include an online store. If you want to shop Hobby Lobby online, visit Crafts Etc. (http://www.craftsetc.com); its online store also has several project ideas and a Tips And Tricks area. If you don't find the information you're looking for, post a message on Crafts Etc.'s Community section, which has free forums.

Hobby People

http://www.hobbypeople.net

Hobby People (formerly Hobby Shack) focuses on model boats, cars, helicopters, planes, and trains. You can find plenty of plastic-only models, but if you're looking for motorized models, you'll love Hobby People's huge selection of motorized model kits and motor components. Browse the large Web site by category or search for specific products by part number or keyword. The Community section offers several guides for beginning modelers, the Hobby Calendar (which lists events), and the Race Connection, which has details about Hobby People's parking lot races.

HobbyTalk

http://www.hobbytalk.com

If you build remote-control cars, stop by HobbyTalk to get the latest information about upcoming events, product recalls, and new products. HobbyTalk doesn't sell products, instead offering user-submitted reviews and a new RC Swap And Sell area. The Radio Control area includes tips for beginners and experienced hobbyists. HobbyTalk's most important feature is its Forums section, which breaks into several categories, including DieCast Collecting, Modeling, and Radio Control. If you'd like to post your own questions or replies, you can register for all of the forums free.

HobbyTown USA

http://www.hobbytown.com

RC enthusiasts will love HobbyTown USA's large remote-control vehicle selection, but HobbyTown doesn't cater only to adults. You'll find kid-friendly science projects and games at the online store, which breaks its categories into "Towns," including RC Airplane Town, Railroad Town, and Toy Town. If you spot a product you'd like to buy, click the Shop Online button and choose a local HobbyTown USA store to find out if it stocks that product. HobbyTown USA also offers a free email newsletter and online magazine.

Rocketry Online

http://www.rocketryonline.com

If you build and launch model rockets, take a look at the Rocketry Online Web site. The main page offers news about legislation and court rulings that affect rocketry hobbyists, as well as links to other relevant articles. Rocketry Online also provides a free online auction house that lets enthusiasts hawk rocket kits, launch pads, and "Missile-aneous" components. In addition, the site offers a Forums section that lets enthusiasts trade tips and tricks.

That's
N E W S
To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month, we scour tens of thousands of newsgroups and highlight the ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month we search for hobby help.

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rec.crafts

Are you looking for certain craft materials or planning to sell your own? Post your offer or request to rec.crafts. Users occasionally post questions about projects to this group, but if you're having trouble finding the right craft project or pottery clay, you're probably better off posting to one of its siblings, such as rec.crafts.dollhouses, rec.crafts.pottery, or rec.crafts.jewelry.

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rec.models.railroad

If you build model trains, share your experience or questions with other model train enthusiasts. Users here swap information and stories and occasionally post offers to buy or sell supplies. As with most user groups, you'll find that some irrelevant posts slip into the mix, but most users post legitimate messages.

S h a r e   T h e   W a r e s

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month we spend some time on our hobbies.

Comic Book Millennium 3.1
http://www.coletechno.com

If your comic book collection is getting out of control, download Cole Software's Comic Book Millennium. The software lets you enter several values, including the book's Title, Publisher, Cover Price, Writer, Artist, and Amount Paid. Thanks to its Run feature, you can add an entire series (or portions of a series, if you are missing certain issues) at once. After you enter your collection, you can search for individual comic books by any of the values you entered and print reports and labels. Comic Book Millennium also lets you keep track of comic books you plan to buy. It has a feature that monitors your collection and removes a particular comic book from your Want list when you add it to the collection. Try Comic Book Millennium free, register it for $14, or buy the CD-ROM for $22.99.

Crossdown 6.0
http://www.crossdown.com

Do you carry half-finished crossword puzzles in your pocket for weeks at a time? If you can't beat 'em, join 'em. Crossdown's Crossdown 6.0 lets you build your own brain twisters. The software offers a variety of grid sizes and special tools that let you create custom block patterns. To create a crossword, simply choose your grid and enter the crossword answers and space blocks. Once you add the crossword's answers, you can add the game's clues. If you're planning to create multiple crossword puzzles, you'll enjoy the Cluebank, which lets you store puzzle clues, and Librarian, which organizes and displays clue answers. If you have trouble developing the next *The New York Times* crossword puzzle, click the Web site's How To Make A Crossword button to read a tutorial by an expert who already has.

We were surprised to see that Crossdown lets you publish your crossword puzzle to a variety of formats. You can export your puzzles to PDF (Portable Document Format) files or to the Web. Plus, you can create standalone crossword puzzle games to share with your friends. Crossdown also includes several ready-to-go crosswords, which means you can practice before creating your own. Crossdown is compatible with Windows 95 and newer OSes (operating systems). Download the free demo or buy the full program for $59.95 (download) or $69.95 (CD-ROM).

Finally, a crossword puzzle application that lets you make up your own answers.

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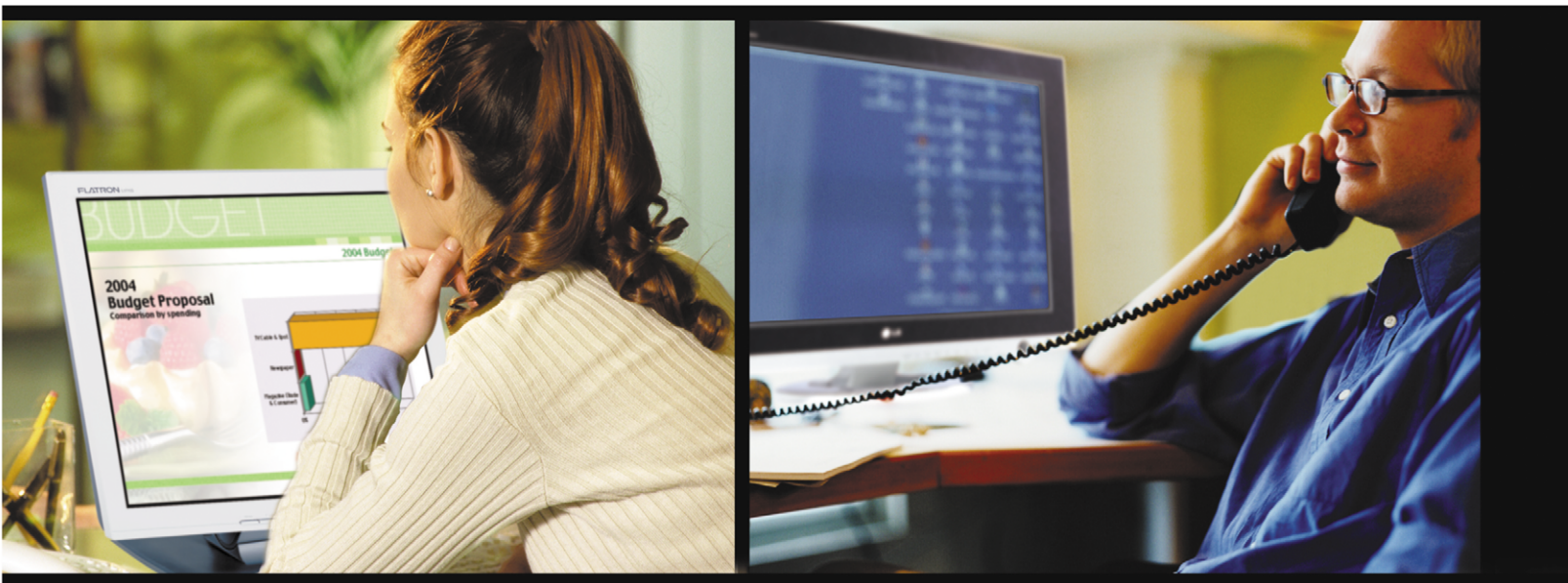
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Life's Good

LG

Tech
Support

Going, Going,

The State Of Customer Service In The Computer Industry

Complaints about technical support services are nothing new. Every technological innovation has its kinks, and the people who have to live with those kinks won't like them. Indeed, surveys conducted by *Consumer Reports*, Technology Business Research, and others show that the customer service satisfaction ratings for some of the world's largest computer companies have slipped. Anecdotal evidence taken from online blogs and chat rooms suggests that users are more fed up than ever. There's certainly plenty to grumble about, but is the situation really that bad?

Put It In Perspective

Not everyone is convinced it is. "It's not clear to me that tech support is declining," says Dr. Richard Feinberg, director of the Center for Customer Driven Quality at Purdue University. "If you take the dissatisfaction experience as a percentage of all contact an individual has with a company, I believe the level of dissatisfaction is going down."

He's probably right. Reputable hardware manufacturers and software developers have a genuine desire to keep their customers happy. And technology consumers in the 21st century have more support resources at their disposal than any group of consumers at any point in time ever. In addition to traditional phone-based support options, consumers can get help with their technical issues by looking in the back of the users manual, logging on to a searchable online support database, perusing FAQs (frequently asked questions) at company Web sites, submitting questions via email, or participating in real-time interactive chats with trained support technicians. Other resources include in-home service calls and Web-based support forums where consumers can have their questions answered by fellow users.

Gone ?

Of course, not all companies offer all of these resources, but there are still many that do.

Yet despite the honest efforts of thousands of technology companies to provide quality support options, consumers continue to complain about the service they receive when they need help the most. What gives? Feinberg believes the mood of dissatisfaction is due in no small part to consumer expectations. "Consumers expect to get the right answer within three seconds," he says. "It's gotten [to the point] where companies just can't keep up."

No one can argue with that. We as a society tend to unreasonably expect perfection from everyone: our politicians, our schools, our doctors, our airlines, even our fast food restaurants. It's no surprise that we would expect the same from our computer companies. But that doesn't mean we should let these companies off the hook.

"They've created their own monster," Feinberg says. "The industry has said we'll help you 24 hours a day, seven days a week. There's no going back on that now."

Nonetheless, obtaining good, consistent technical support is a very real problem, as documented in our "Support Showdown" article on page 62. When major companies purport to offer—but consistently fail to provide—accurate and helpful support, it results in angry, frustrated consumers.

Tech Support Today

To meet the seemingly insatiable demand for quality service, the industry has had to develop a new system for providing technical assistance. Unlike the previous system, which was characterized by a remote technician dishing out solutions on a first-come, first-served basis, the new system is typically built around a searchable Web database that lets a company service more users in a more convenient and timely manner. "It's the mass commoditization of technical services," says Phil Fersht, senior analyst at the Yankee Group. "[Technical support] is now a quick, easy, and cheap process rather than a personalized program."

As a result of the push toward commoditized support services, companies have had to cut the costs related to phone-based support. They do so by hiding their support phone numbers to minimize calls, charging customers a fee for calls, and—most notoriously—outsourcing their support services to cheaper offshore firms located in Canada, Europe, and Asia.

There Is Hope

But all is not lost. Consumers can avoid becoming slaves to technical support services by purchasing products from companies that have established reputations for providing quality service, as well as learning how to deal with tech support representatives (see "Get Better Support" on page 66), taking advantage of the many self-help resources that are currently available (see "Help Yourself" on page 74), and practicing prudent computing habits so as to avoid needing technical support in the first place (see "Your Best Bet" on page 70). After all, you can solve your problems faster and more efficiently than anyone else. Who can complain about that? ▮

BY JEFF DODD

Looking For More Help?

SmartComputing.com is a great tech support resource. *Smart Computing* subscribers have access to:

- 20,000+ articles on various PC-related topics
- How-to's, reviews, and troubleshooting tips
- Online dictionary, encyclopedia, and Q&A Board

If you have a computing problem you're unable to solve, try using our Web site. If you can't find the answer on our site, contact us at (800) 368-8304 and we'll help you locate the answer.

http://www.smartcomputing.com

Down & Out & Offshore

The Decline Of Tech Support

Dan Kroeger had received undeliverable message errors before. What made the sudden appearance of these particular undeliverables so troubling was that they were addressed to people he didn't know. The retired maintenance analyst from Milwaukee, Wis., assessed the situation and quickly determined that the unknown individuals were listed in his Clickability address book. That signaled a problem.

Clickability is a program The Wall Street Journal Online, CNN Interactive, and other online content providers offer to site visitors as a way of helping them email interesting articles to friends and colleagues. Kroeger had used the program without incident for more than three years. Now, for reasons he couldn't understand, Clickability was attempting to send articles to people he didn't even know.

So Kroeger did what any computer user with a problem would do: He sent Clickability an email message asking for help. When the company failed to respond, he sent another. And another. And another. He also made a few phone calls on his own dime (Clickability, like many technology companies, doesn't provide a toll-free phone number to its customers) but was forced to leave voice messages and never received a response. Frustrated with the situation, Kroeger sent Clickability one final message and carbon copied it to the editor of The Wall Street Journal Online. Perhaps because it did not want to annoy one of its biggest accounts, Clickability responded within eight hours. The ensuing email conversation went something like this:

Clickability: Thank you for your email. Please reply with detailed information about the problem you are encountering. Regards, Clickability Customer Care.

Kroeger: Here is my problem . . . (*outlines the problem in detail*)

Clickability: Thank you for your reply. We will get back to you soon.

Kroeger: (*after four days with no response*) Remember me? I'm still having problems with strange addresses in my Clickability address book.

Clickability: Thank you for your email. Please try to delete and reset your cookies.

Kroeger: I did what you asked me to do, and it has not helped. What is happening here?

Clickability: Thank you for your email. We are sorry the problem is still happening. We are looking into your account and need more information.

Kroeger: Here it is . . . (*provides the requested information*)

That was four weeks ago. Kroeger has yet to hear a response.

Common Complaints

Dan Kroeger isn't the only computer user to have an unpleasant experience with tech support services. Anecdotal evidence suggests widespread dissatisfaction with customer service in general and technical support service in particular. *Consumer Reports* magazine reports that technical support services in the computer industry regularly receive some of the lowest customer satisfaction ratings among all services the magazine tracks. Why?

No one knows for certain, says Chris Selland, the vice president of sell-side research at the Aberdeen Group. Selland reports that while individual companies often maintain statistics about call volume and hold times, it's difficult for industry analysts to draw conclusions by comparing these metrics. "It's like comparing apples and oranges," Selland says. "You can't even compare how Microsoft supports Windows and how it supports Microsoft Office and how it supports System Server because there are so many variables involved."

Nevertheless, a conscientious listener is bound to recognize several common complaints cited by disgruntled computer users, including difficulty accessing a support technician, lack of resolution, language barriers, and outright disrespect for the consumer.
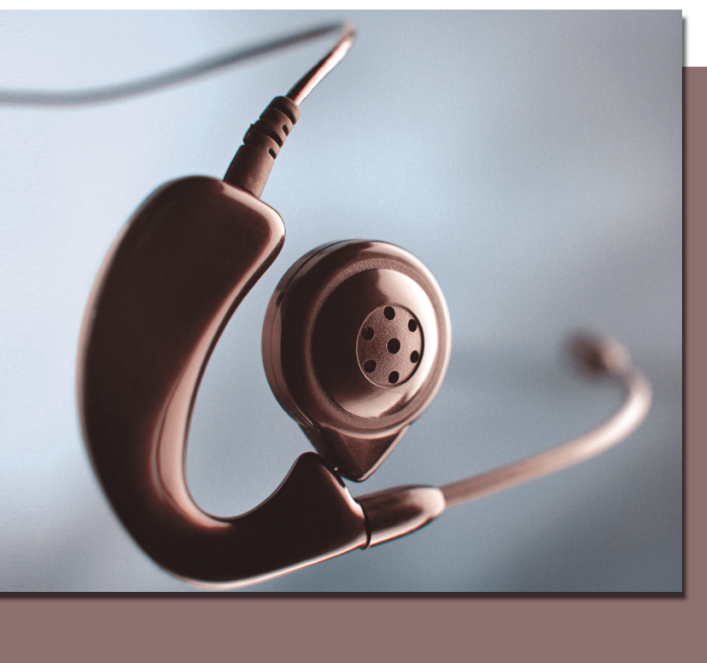
Difficulty accessing a support technician. Many computer users complain that it has become both cumbersome and costly to get a living, breathing service technician on the line. Companies may hide their support phone numbers in the users manual or behind several layers of Web hyperlinks. We had to burrow five pages deep to find support numbers at both the Microsoft and Symantec sites, for instance. And in both cases, we would have had to pay a considerable amount of money—$35 for Microsoft and $29.95 for Symantec (or as much as $69.95 for Symantec's virus removal support)—for the privilege of using those numbers.

Customers who manage to locate a phone number for free support service can expect to negotiate a labyrinth of automated messages and touchtone options only to end up listening to light jazz and company advertisements while waiting for a human being to pick up the phone. According to BenchmarkPortal, consumers can expect to wait in queue an average of 44.63 seconds when calling for help about hardware and 52.4 seconds when calling for help about software. Users who opt to submit their questions by email, as Kroeger did, may wait days or weeks for a response . . . if they get one at all.

Lack of a resolution. Users who contact technical support services generally have one goal in mind: to obtain a solution to a problem. But for too many users, that goal is never achieved. Just ask Randy Hill.

Hill is a Web designer in Alpine, N.J. He called technical support because the DVD-RW (DVD-rewriteable) drive in his Dell computer refused to **burn** (record data to) DVDs. Unlike Kroeger, Hill was able to reach a live technician when he made his phone calls, and he explained his problem. A solution was suggested, attempted, and failed. Hill called again. Another solution was suggested, attempted, and failed. After spending approximately 20 hours on the phone with various technicians over the course of a week, Hill decided he'd had just about enough. That's when a technician suggested that Hill would need a new optical drive.

Assuming this was a job he could do faster and with less frustration if he undertook it himself, Hill declined the on-site support he was qualified to receive. Instead, he asked the technician to send him the drive so he could install it on his own. The technician was more than happy to oblige, and Hill received the new drive within five days. That's when he received a shock: Dell had shipped him a DVD-ROM drive instead of a DVD-RW drive.

Hill had no use for the DVD-ROM drive, so when he began experiencing other problems with the computer, he became so fed up that he gave the system to his nephew. "I never called Dell after that because I was sick of them."

Hill's experience is not unique, and that's a serious problem, says Barry Jacobs, publisher of "Defying The Limits," a print and online project devoted to CRM (customer relationship management) issues. "You have to start from the premise that the first point of contact in any business situation is the most important contact." Companies need to take their responsibility seriously and resolve a customer's technical problems as quickly as possible, he says. "Whether it's a Web chat or a phone conversation, if it doesn't go smoothly, the company is going to hurt its chances of having a happy customer."

Hill certainly wasn't a happy customer. He says he'll never do business with Dell again, and he's shared his experience with others in hopes that they won't do business with Dell, either.

Language barrier. Then there's the language barrier resulting from the increase in offshore outsourcing of technical support services. Selland of the Aberdeen Group says the economic and patriotic facets of this hot-button issue have drawn attention away from what is arguably the most important point a company should consider when sending its support services overseas: Will the contracted employees provide quality service to the company's customers?

"I believe that 99% of consumers don't care where the support comes from as long as it's good support, with the 1% of consumers who do care being the people who were laid off from a domestic call center," he says. "But if a company is handling support by hiring people who can't speak English, that company is not handling support the right way."

Whatever a person's position on the issue of offshoring, a few facts remain beyond dispute. First, the career track for a person in technical support services is generally much more appealing to an individual in, say, India or the Philippines than it is for a U.S. citizen. As a result, support technicians in developing nations are more likely to be highly educated and highly motivated. Second, it is often much cheaper for a company to hire technicians living in another country than it is to hire Americans. A college-educated individual from the United States is not likely to be satisfied with a job that pays less than $10 an hour.

As long as the technology industry relies on offshore technical support services, the burden rests with stateside software and hardware companies to train the technicians so that they have the skills to handle customer concerns.

That means cultural skills, as well as technical skills, says Art Schoeller, a senior analyst with the Yankee Group. "The really good performers are the ones who ensure their agents are trained in cultural affinity and accent neutralization," Schoeller says. "The good ones will have their agents watching 'Seinfeld' during their breaks."

Disrespect for the consumer. Despite the long wait times, the failed solutions, and the cultural barriers, many computer users would be willing to forgive their hardware manufacturers and software developers if these companies only did one thing: treat their customers with respect.

One way they can do that is by accepting responsibility when a problem occurs. In the May 2004 issue of *Smart Computing*, columnist Alan Luber described how Symantec released a buggy update and then did nothing to notify users about the problem. The failure to accept responsibility sends the message that existing customers are less important than potential customers.

Another way companies could show respect to the consumer is to assume that they know something about computers, says Julie Perron, manager of primary research at Technology Business Research. "Customers often complain that they're treated like idiots," she says. "[The support technicians] ask them questions like 'Is it plugged in?' rather than getting straight to the issue."

Selland of the Aberdeen Group says companies should realize that typical PC users view phone-based support as a last-resort option and they only make the call after taking steps to fix obvious problems. "Most people," he explains, "actually prefer serving themselves if it's faster, quicker, and easier." Treating them as if they were simpletons not only prolongs the time it takes to find a solution but also increases customer

agitation and ensures that customers have a poor support experience.

Placing The Blame

Whatever the complaints, one fact remains: Users aren't getting solutions to their problems in a timely and courteous fashion. The obvious cause is money. It costs a lot to produce and maintain a highly trained support staff. Companies try to defray those costs by minimizing training expenses, outsourcing work to domestic or offshore

The Symantec Support site proudly proclaims that you can get online support for free but that you'll need to pay at least $29.95 for phone support.

call centers, and offering financial incentives that encourage technicians to answer more calls in less time. The results of such economic efforts are often less than successful. After all, few consumers will be satisfied with the quality of the service as long as it's provided by unskilled individuals who want to hang up after a few minutes of talk time.

Money isn't solely to blame, however. Many of the analysts we interviewed suggest that the perceived decline in the quality of tech support has more to do with the evolution of the support model and less to do with an actual increase in consumer dissatisfaction. "The simple calls are going to self-service," Selland says, "and what remains are the calls that involve multiple stages and multiple support reps and are always challenging." Complicating matters is the fact that technology has

evolved to the point where absolute neophytes can buy complex hardware and software. "This creates a very difficult situation," says Jacobs of "Defying The Limits." "A technical person must be a saint, psychologist, and robot in order to help these customers."

Whatever the problems, the solution may simply be time. "Self-help support options are getting better," says Perron. "In the beginning, the tools were less mature and [consumers] complained about navigation. But the more people use them, the more they improve."

Schoeller of the Yankee Group thinks the quality of overseas phone and email support centers will improve, as well. "One thing that helps a call center run well is front-line managers," he explains. "We haven't been [overseas] long enough to grow enough front-line managers through the ranks." As U.S. dependence on overseas call centers continues to grow—and all of the analysts we interviewed believe it will—the technicians will gain the experience they need to handle just about any problem thrown their way.

Facing The Future

To users like Dan Kroeger and Randy Hill, such optimism may seem unwarranted. Indeed, it would be unwarranted if not for the one constant that governs business in a capitalist world.

"The customer is king," Jacobs says. "If you want to be the No. 1 company, you need to have excellent customer service. These are costs that need to be spent. They are costs that provide tremendous revenue eventually." The promise of "tremendous revenue" is enough to keep even the most self-interested company focused on providing quality customer service as long as its customers need it. ▌▌

BY JEFF DODD

Lighten Up.

It wasn't so long ago that if you wanted to bring your data with you, your hardware had to come too. Well, that's all in the past now thanks to the new SanDisk Cruzer™ Mini. At under half an ounce, the Cruzer Mini goes anywhere, and with up to 256MB of flash memory, it takes a lot with it. Hi-speed USB 2.0 compliant, SanDisk's Cruzer Mini lets you transfer data faster than ever before. And at less than 8mm thick, all it needs is a single USB slot. Just drag, drop, and go. It's all about convenience – no extra hardware, no worries.

So whether you're installing utilities or updating print drivers for the umpteenth time, you can take your files with you wherever you go – and you won't even need your dolly.

For more information on SanDisk Cruzer Mini, visit www.sandisk.com/smart

HI-SPEED
CERTIFIED **USB**
HI-SPEED USB 2.0

SanDisk

Support Showdown

We Put The Industry's Tech Support To The Test

Regardless of whether you're a computer newbie or a master software programmer, everyone needs technical support at one time or another. Few programs or hardware devices run flawlessly all the time, and if you stumble upon a problem you can't solve, the company's tech support is there to help you. At least, that's the idea.

In reality, they might not be there to help you. Or they might be there, but they might not actually help. If you're lucky, they'll be there *and* help you. Such is life with tech support. You can never be entirely sure that your call or email to support will result in a solution to your problem. That's where we come in; we put 28 companies to the test to see which companies can and can't deliver support when we need it.

What We Found

Dealing with technical support is like seeing what's underneath the gray blocks on a lottery scratch ticket, albeit with slightly better odds. Sure, there's always a number or symbol under the first block you scratch on a ticket, but it rarely matches one of the winning numbers. Similarly, it's usually easy to find a support telephone number or email address when you run into computer trouble, but it's not so easy to get a quick answer. As you scratch off more blocks on the lottery ticket, you might win a dollar here or there, but you're not likely to find a winner under every block. The same is true of tech support, where you might encounter partial success during a call or email volley but seldom will you receive a flawless transaction from beginning to end.

For instance, a support representative might eventually fix your problem, but after waiting on hold for 20 minutes and being transferred to two other representatives (the last of which actually provides a working solution), you realize that you paid heavily in time and frustration to get that solution.

Lady Luck isn't always so elusive in the tech support world. In fact, our research revealed that when dealing with some companies, luck doesn't seem to be a factor at all because their support services reflect consistent quality with every call. Other companies reflect a similar consistency, but on the wrong end of the quality scale; we received poor support in one way or another each time we called. Surprisingly, one of the most frustrating support experiences we encountered occurred when one of our calls resulted in a positive result and the very next—to the same company—ended in a negative result.

Although support can vary from call to call and company to company, it also appears to vary among the categories of hardware, software, and services. We couldn't realistically include a massive sampling of companies within each category due to the space constraints of this article, but we still perceived differences in the quality of support between, for example, companies offering Internet services and companies selling peripherals. Can we regard this as the luck of the draw (or the scratch, if you will) on the particular day we called or emailed? Perhaps, but the C grades we gave out across the board for all ISPs (Internet service providers) we tested look rather dismal against all the As and Bs given to the peripheral-based companies.

Of all the categories, companies selling peripherals delivered effective, knowledgeable support just about every time we contacted them, whereas ISPs rarely got it right. Also impressive were the companies selling OSes
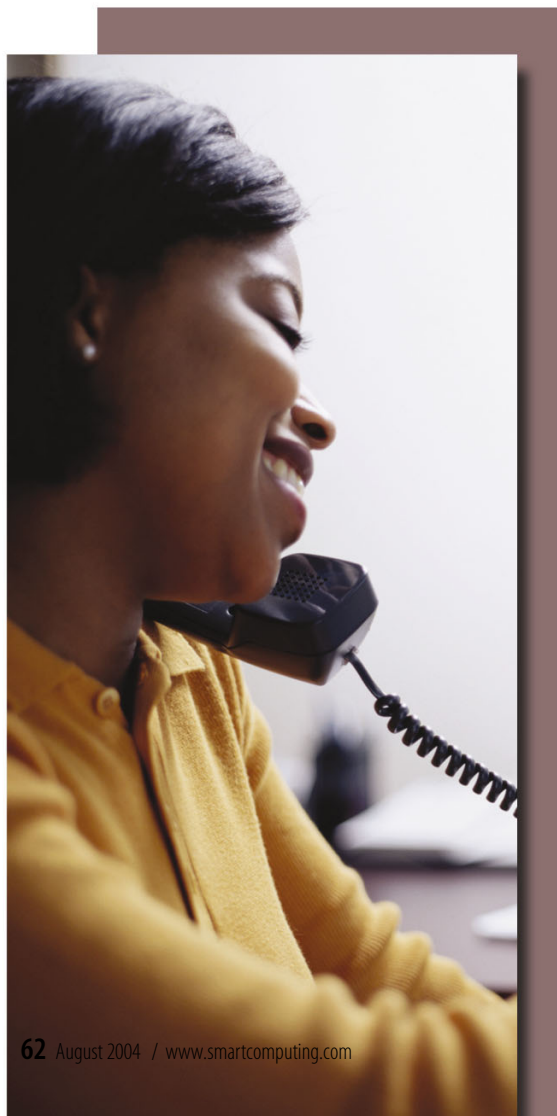
(operating systems), software firewalls, and graphics applications. Several major computer manufacturers didn't fare as well, and neither did companies selling CD-burning software and antivirus software. Let's go over our results now so you can see exactly which companies provided the best and worst support in each category.

System Manufacturers

Companies such as Dell, Gateway, and others that build and sell computers are intimately familiar with the support process, especially since many of their customers rely on them to solve just about any problem that surfaces at any time. But despite the years and years of support experience these companies have, some of the major players still can't provide effective support.

Both of our test calls to HP met with long hold times, several transfers, and even two disconnections before we finally spoke to representatives who would handle our problems—neither of which they ever resolved. Gateway exhibited similar inefficiency, with representatives who suggested reinstalling the Gateway system software (including Windows) for problems that required less intensive fixes. Hold times varied wildly within the System Manufacturers category, as both calls to Compaq resulted in hold times of nearly 30 minutes, whereas Dell representatives answered both of our calls within just a few minutes. Although Dell performed well in most tests, Alienware easily beat all the competitors we tested in this category. (Alienware sells fast, high-end computers.) It solved both of our problems quickly and efficiently using representatives who seemed to be the most knowledgeable in this category. To be fair, though, Alienware sells systems to more advanced users so it's likely to receive fewer support calls.

ISPs

In the ISPs category, we tested two dial-up Internet providers (AOL and MSN) and two broadband providers (Comcast and Verizon), and none of them fared well. Only one—Comcast—managed to solve one of the two problems we presented to it, with the other call to the company and all of the other calls or emails in this category resulting in dead ends or advice that helped the problem but didn't solve it altogether.

In the ISPs category more than any other, support representatives appeared to know the least about computers in general, even if the problem dealt with an Internet-related matter. During one call to MSN, the representative said he couldn't solve our Usenet connection problem because "most of the Internet does not support Usenet." Another company (Verizon) had one representative who seemed to have expert knowledge of routers, while another rep wasn't sure how the basic PING (Packet Internet Groper) networking utility worked.

On the bright side, this category featured some of the shortest telephone hold times, which is certainly a plus when you're in panic mode because your Internet connection is faltering. Unfortunately, those short hold times don't amount to much when the representative can't adequately resolve the problem, which was the case with most of these calls.

OSes & Miscellaneous Software

Along with the Peripherals category, we rated the OSes & Miscellaneous Software category high after completing our tests. We came away particularly impressed with the support the OS companies delivered, including Linux vendors Red Hat and SUSE (garnering A- and B+ overall grades, respectively), as well as Microsoft, which earned an overall B grade.

The representatives from the Linux companies were well-versed in their companies' technologies and computers in general, and had little trouble solving both our simple and complex problems. Microsoft's support reps displayed similar aptitude, although they required more time to find a proper solution.

Also reliable in this group was the support from two major software firewall developers, ISS (Internet Security Systems, makers of BlackICE) and Zone Labs (makers of ZoneAlarm), although Zone Labs wasn't able to solve one of our two problems. ISS, however, emailed us almost instantly in response to our emailed support questions and provided effective solutions to each problem.

The OSes & Miscellaneous Software category didn't pass entirely with flying colors, though, primarily

due to the substandard support we received from two antivirus kingpins, McAfee and Symantec. Symantec representatives responded quickly to our inquiries, but they couldn't solve either of our software problems. McAfee's support was similarly unimpressive, although the technicians were slightly more knowledgeable and helpful—that is, when they finally responded to our emailed problems. Both companies can take a lesson from WinZip, whose representative responded almost instantaneously to both of our emailed questions and answered them politely and accurately.

Productivity & Multimedia Software

Another hit-and-miss category included companies that sell productivity and multimedia software, although we did see some positive trends. For example, two major graphics software players—Adobe and Corel—earned A grades for their fantastic support, and considering that only six of the 28 companies we tested earned an A, we tend to think that graphics software companies consider support a priority.

Again, you always deal with the luck of the draw and there are plenty of companies out there offering similar software, but even so, it's still possible that our findings are more than mere coincidence. After all, how coincidental is it that the two companies earning the lowest grades in this category both develop CD-burning software? Ahead Software and Roxio were mediocre at best in our testing, with Roxio failing to solve either of our problems.

Two other companies in this category, Intuit (developers of Quicken) and RealNetworks (developers of RealPlayer), responded to our phone calls and emails quickly, and although the RealNetworks support staff adequately solved our problems, the Intuit support staff didn't.

Peripherals

The support we received from peripheral manufacturers was among the most polite, professional, and effective in our entire study. Considering that there's plenty that can go awry with printers, cameras, scanners, and similar devices that we use constantly, it's good to know that these companies appear to be on the right track when it comes to support.

The best of the bunch here was Lexmark, which offered nearly flawless support for our technical mishaps. Epson wasn't far behind, although one of its representatives couldn't completely solve one of our problems. The other companies in this group—Canon, Kodak, and Samsung—all fared similarly well.

Even Your Problems Need Luck

F. Scott Fitzgerald once said, "Never confuse a single defeat with a final defeat." This holds particularly true in the tech support world, where we found that a company's poor support one day could morph into exceptional support the next. Depending on your problem, the time of day when you contact the company, and the representative you reach, you could have vastly

Experimental Fixes Can Nix Support

When our cars break down on the highway, our natural tendency is to pull over, shut off the engine, open the hood, and get out to take a look. Sure, most of us don't have an inkling of what we're looking at, but it sure beats sitting in the car and looking like a dummy. When the roadside service technician appears, we point at the engine and shake our head while he gets to work at actually fixing the problem. He doesn't care that you opened the hood; in fact, he expects it.

Computer support representatives don't operate in quite the same manner. On the contrary, opening your PC case and messing with its internals could cause a rep to deny support, and often for good reason. Whereas many auto owners aren't about to plunge their hands under the hood to diagnose problems, PC owners often try to fix problems by adding new components (such as more memory) or tweaking settings in the ever-so-delicate Windows Registry. Sometimes, this type of hands-on troubleshooting can cause even more problems, and support representatives are well aware of this potential predicament. As a result, some companies will refuse to provide support for their products under certain conditions, especially those in which you messed with things. Even if the changes couldn't possibly affect the product in question, some companies still take the we-don't-support-that-configuration route in order to decrease tech support time and subsequent costs.

To be on the safe side, try not to make major changes to your computer while attempting to solve a problem unless you're intimately familiar with both the process and the expected outcome. If you plan to rely on tech support at any time in the future, it's usually best to call or email before you get yourself in deeper hot water. With that said, it does pay to read the product manual and the company's Web site to see what is or isn't covered under that company's support policy. If a company claims it won't provide support for its product if you made even the most minor of system changes, such as changing your screen saver or a performing a similarly benign action, take note of what *not* to mention when you call. Although divulging information is almost always key to a successful support call, you can usually work around extremely strict support policies to get the help you need. ▌

differing support experiences for the same product. In any case, we like to see consistently successful support, and if our tests with Adobe, Alienware, and Lexmark are any indication, that level of support is certainly attainable.

Unless you built your PC from the silicon up, it's difficult to completely avoid tech support for the life of your computer and its programs. But because our research suggests that you're more likely to receive better support for products such as peripherals and graphics software than you are for your Internet connection or antivirus software, we hope your problems fall within a more support-friendly area, if they must fall anywhere at all. ❚❚

BY CHRISTIAN PERRY

The Tech Support Report Card

We put the technical support of 28 companies to the test by selecting several companies in each of five major categories. Each company received two separate phone calls or emails, with one requesting support for a simple problem and another requesting support for a more complex problem. For example, a simple problem could entail our inability to print from a program, and a more complex problem might involve constant system crashing.

We graded each company on four criteria—Accessibility, Knowledge & Professionalism, Support Time, and Successful Solution—and compiled an overall grade from those criteria. Accessibility depended on our ability to easily find support contact information, and once we found that information, how long we waited to speak to representatives on the phone or receive personalized emails (not automated replies). Knowledge & Professionalism graded the representatives' knowledge of the product and related technology, willingness and ability to troubleshoot our problems, and capacity for conducting courteous, well-executed support sessions. Support Time looked at the length of time the representatives required to conduct the support sessions (for email support, we took into account reasonable delays for message exchange). Successful Solution judged the representatives' ability to solve our problems, with some leeway granted for information that helped the problem but didn't completely solve it.

	Overall Grade	Accessibility	Knowledge & Professionalism	Support Time	Successful Solution
System Manufacturers					
Alienware	A	B	A	B	A
Dell	B	A	B	C	B
Compaq	C	D	B	C	B
Gateway	C-	C	C	D	C
HP	D	B	D	C	F
ISPs					
AOL	C	A	C	C	D
Verizon	C	B	C	B	D
Comcast	C	B	C	D	C
MSN	C-	C	D	B	F
OSes & Miscellaneous Software					
Red Hat	A-	C	A	A	A
SUSE	B+	B	B	B	A
WinZip	B+	A	B	B	B
Internet Security Systems	B+	C	A	B	A
Microsoft	B	A	B	C	B
Zone Labs	B	B	B	C	C
McAfee	C	B	B	D	D
Symantec	D	D	C	A	F
Productivity & Multimedia Software					
Adobe	A	B	A	B	A
Corel	A-	A	A	B	B
RealNetworks	B-	B	C	C	B
Intuit	C	A	C	D	D
Ahead Software	C-	C	D	C	C
Roxio	D	D	C	D	F
Peripherals					
Lexmark	A	B	A	A	A
Epson	A-	B	A	A	B
Canon	B	B	C	B	A
Kodak	B	A	B	C	B
Samsung	B-	C	B	B	C

Get Better Support

How To Make Tech Support
Work For You, Not Against You

During times when a ghost seems to be inside your computer wreaking havoc, it would seem appropriate to call Ghostbusters. But because these scientists and their Ecto Blasters exist only in the make-believe world of Hollywood, we must resort to the next-best option: tech support. Unfortunately, even though the Ghostbusters always seemed to solve everyone's slimy problems, support representatives don't always deliver spectacular results—if they deliver results at all.

Because technical support is such a hit-or-miss affair, it pays to come prepared with plenty of information on both the problem and your system, which means you'll need to do a little legwork before the call. You can even turn seemingly doomed support calls into successes by understanding how call support centers work, although you might be surprised by what you read. So before you pick up the phone to ask for technical help, read on to learn how to get the best support possible.

Take Care To Prepare

In a perfect world, all of our hardware and software would include free lifetime telephone support, and when we place a call to a company's support center, it would know exactly what product model or version we're using and the exact configuration of our computers. Unfortunately, this isn't a perfect world, so you need to prepare not only for potential support costs but also for the likelihood that the support representative has no inkling of your configuration.

Check for costs. Not all telephone support is free. In fact, an increasing number of companies are charging for any and all telephone support, so much that it's becoming tougher to place a support call without incurring a cost, whether that means you'll be paying for a long-distance telephone call, the support itself, or both. Many large companies, especially computer manufacturers, understand that support is a top priority for its customers, and they sometimes include support as part of an extended premium package. Before you place a support call, read the fine print included with your product documentation or on the company's Web site to see whether the support is free to anyone, is included in a support package that you may or may not have, or requires payment.

The payment structure some companies use for their support services can be downright confusing, even after you read all of the fine print. For example, Microsoft offers two "incidents" and unlimited installation support at no charge (though the phone number for this support isn't toll-free). What's an incident? Microsoft defines it as a "single support issue," which is a "problem that cannot be broken down into subordinate issues." In other words, if the support representative determines that the problem involves other issues, they'll deal with the other issues as other incidents, and your free support leash will shorten in a hurry. After your free support options are spent, you'll need to pay $35 for each problem, but at least the phone number is toll-free for this option.

Remember that even if the support is free but you're calling a long-distance number, a long hold time can easily equate to an expensive call. Other companies might charge by the minute, which also can mean big bucks if you're on the phone for a long period, whether that time is spent with the representative or with sleep-inducing music.

Know thy problem, know thy system. Before you make the call, you must embark on a fact-finding mission for details about the problem you're experiencing, the product's model or version, and your system configuration. By arming yourself with this information before you place the call, you can help the support rep properly diagnose your problem. If you don't have the information ready, the rep might ask you to locate it while you're on the phone, and if you're paying for the call, you could be paying extra for steps you could've finished before you even made the call.

To get started, grab a pen and some paper on which you can jot down all of your information. Unless you plan on printing the information, don't type it into Notepad or another word processing program because you might need to close all your programs or reboot your computer during the call. It's also a good idea to have some blank paper ready in case you need to take notes because even if the representative fixes your problem, you can often glean some good tips on related items during the process (that is, if you happened to reach a knowledgeable rep).

Don't delay the process of documenting as much information as possible on the problem itself because the longer you wait to do it, the more likely you'll forget details when you call. If you're receiving an error message while using Windows or other software, write down *exactly* what it says and when it appears. (You also could use your PRINT SCREEN key to take a screen shot of some error messages, paste the
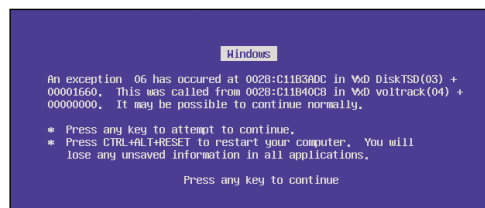
graphic into your Paint application, and save it as a file.) It's important to write down everything that appears in the error message because even though long strings of code or similar data might appear nonsensical to you, they can make perfect sense to a support rep who's familiar with the product.

If an error appears only when you perform a specific action, indicate that action, or if it seems to appear randomly, take note of what actions you were performing at these different times. Try to construct a step-by-step breakdown of what you were doing at the time to help the representative diagnose the error. If you weren't doing anything, indicate what other programs were running at the time the error message appeared. If the problem exists with a hardware device and you're not receiving an error message, it's still a good idea to write down all the software that was running when the problem occurred. If you performed any troubleshooting techniques, such as scanning your drive for errors, running a virus check, or rebooting, jot those down, too.

Next, gather details on the program or hardware, including your registration number, license number, software version, model name and number, serial number, driver version, and any other related information you can find. The representative also might ask for a customer number or invoice number, depending on where you bought the item, along with any usernames and passwords, if applicable. If you have trouble locating details on your software or hardware, check the documentation, which might contain the information itself or tell you how to find it on the computer. If you need your PC's serial

Even if all the cryptic codes and numbers in an error message seem inconsequential, write down the message exactly as it appears because those codes can mean plenty during a support call.

number, check the label on the back or inside of the case.

You also should write down your computer's general specifications, regardless of whether the problem appears to exist with hardware or software. Indicate the model of your motherboard and processor (include the processor's speed), the amount of system memory, the number and size of your PC's hard drives, as well as information about any video, sound, and network cards. You can obtain some of this information, including your Windows version, by right-clicking My Computer and choosing Properties.

Finally, back up any crucial files, including documents and email, to a CD or a spare hard drive before placing the call. Although tech support is designed to help users, occasionally the advice that reps give causes even more damage and results in destroyed or lost data. Don't take any chances with your data.

Find the number. When dealing with companies that charge for their support, it's usually easy to locate the number you need to call; you can typically find it displayed on your product

documentation or on the manufacturer's site in the support section. With other companies, especially those that claim to offer free phone support, it's not quite as easy to find a number, so you might need to dig deep on the company's site or in the product manual.

Many companies prefer that you use email or online forms to send your questions, and they'll list these as the primary options, with phone support info buried somewhere else. Other companies don't offer phone support, which leaves you with email or online forms. An increasing number of companies also offer live chat support, which can be as effective as phone support.

Some companies train support reps to keep calls as short as possible. In fact, the shorter the call, the better the rep appears to be as far as management is concerned because time equals money when it comes to support. Obviously, a rushed environment doesn't bode well for solving your problem, so it's important to try to stay on the phone until the rep fixes the problem. Even if you're calling a premium tech support service that charges by the minute, you should know how to handle the support process to ensure that the rep resolves your problem before hanging up.

Support call centers vary in the ways they handle customers, but many operate similarly enough that you can figure out what to expect most of the time. If a support representative can't solve your problem within a reasonable amount of time, such as 10 minutes, he might use any of several tactics to either get you off the phone (with your problem still unresolved) or pass you on to someone else who may or may not be able to adequately help you.

A common method used to dispense with calls revolves around the fine print included with product documentation. Because no manufacturers can reasonably test their products using every known hardware and software combination, many won't provide support for their own products if they're used with certain other products (or, in extreme cases, *any* other products). In the support arena, this means that reps often tell customers that they can't provide support for particular configurations, even if it's a common configuration.

Another tactic that reps use is **punting** (handing off calls to other reps). Although this can be helpful if you're actually transferred to a more knowledgeable rep, many times the other rep won't be able to solve your problem, either. Call centers often refer to this process as **escalating** your call to a higher-tiered support level, but sometimes the next tier is no more adept than the previous one was. Of course, escalating your call means that you'll be on the phone longer; meanwhile, the actual call times of the different reps handling your call are just fractions of your total call time, which possibly reflects well on them. However, don't assume that when you're transferred to someone else that the new rep won't be able to handle your problem. Even if the next person is at the same technical level as the last, this person might have experience dealing with the specific problem you're having.

Although you can't always avoid these tactics, it's possible to complete a successful support call most of the time if you do it right. For starters, try to call

Poor Support Isn't A Dead-End

Although the quality of technical support isn't what it used to be, it's still effective enough that we don't run screaming from both our computers *and* the phone when we encounter trouble. But if you call for help even occasionally, you're bound to run into a representative that simply can't or won't help you. That doesn't mean you should live with the lousy support.

One option is to try calling back at another time and possibly nab a different support rep. If there is a record of your previous call, the tech support staff might refuse to further address the problem, but you might get lucky and find a rep who's willing and able to fix it. Of course, if you have to pay for each support call, calling back isn't necessarily an affordable option, especially if your problem isn't major. If you don't want to pay again or deal with the possibility of another fruitless call, check online for a possible resolution. Our *Smart Computing* archives (http://www .smartcomputing.com) have years' worth of troubleshooting tips. Plus, you can visit the forums at high-traffic technical sites, such as Ars Technica (http:// arstechnica.infopop.net), AnandTech (http:// forums.anandtech.com), and *Smart Computing*'s online Q&A Board, for loads of help from fellow users.

If you feel that poor support deserves adequate feedback, either to help the company improve future efforts or to warn other consumers (or both), you have a few options. You can try to contact the company using an email address or telephone number intended for customer feedback, but you're more likely to see results if you dig around for a number that connects you to someone in management. Alternately, you can submit a complaint about your experience at ResellerRatings.com (http://www.reseller ratings.com), which has 118,000 reviews on nearly 6,000 companies and is considered a primary go-to resource for potential buyers of computer products. If you do log a complaint here or on another Web site, make sure you stick with the facts and avoid libelous claims, both for your sake and those of other readers. Even we might be able to help. Consider contacting *Smart Computing*'s Action Editor by email at actioneditor@smart computing.com or fax at (402) 479-2104.

during periods when you're not likely to stay on hold for a long time. For most tech support centers, that means to avoid making your call on the weekends, Mondays, and evenings and trying to call precisely when the call center opens in the morning. You might even find real-time information on the company's site that shows how busy the call center currently is, and if you find that it's busy at one time, check again later for a slower period.
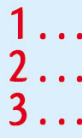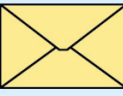
When you do reach someone, introduce yourself and calmly explain your problem as concisely as possible, even if it's seemingly a complex, confusing issue. From there, the rep can ask for more details to find out exactly when the problem is happening and why. Be prepared to supply all of the information you previously wrote down about the problem, the product itself, and your system, as all of it will help the rep zero in on the trouble. As the rep asks for more info, it's a good idea to mention any troubleshooting you already performed (as detailed on your notes) because you'll waste time if the rep tries to walk you through a procedure you already tried with no success.

If you have one phone line and use a dial-up connection and the rep instructs you to download a new driver or other utility, make sure you ask for a case number that the call center can reference when you call back (because you'll need to hang up your phone to connect to the Internet). If you don't need to hang up to download anything, make sure you keep the rep on the phone while you download and install the driver or utility.

Because you read *Smart Computing*, you already know a thing or two about computers. Don't be shocked or discouraged if it seems like you know more than the support rep because although you might have greater overall knowledge about computers, that rep might just know how to fix a problem you can't. At the same time, you can use your computing experience to evaluate the representative's advice before you use it, especially if the advice is drastic.

Before You Make The Call

Preparation is key to placing a successful tech support call, so we assembled a list of precall duties you should perform before picking up the phone.

Locate the support telephone number(s).	Determine whether the call is free or requires payment.	Write down the specifics of the problem, error messages, and attempted troubleshooting procedures.
Write down all other software running at the time the problem occurred.	1 . . . 2 . . . 3 . . . If possible, construct a step-by-step breakdown of actions leading up to the problem.	Collect system information, including the OS (operating system), processor type and speed, memory, and other hardware.
Back up any important files, including documents and email.	19JFT9995STR19C Gather details on problematic software or hardware, including registration and/or serial numbers.	Prepare a concise explanation to introduce the problem to the representative.

Many customers complain that support reps instruct them to reinstall Windows or reformat their hard drive if they can't figure out a solution, regardless of how minor the problem is. Sure, doing so will probably solve the problem, but it also will create a major headache for you as you start from scratch by moving all existing data off of your hard drive and reinstalling your OS (operating system) and apps. If you get advice to reinstall Windows or reformat your hard drive, consider checking other resources because you might be able to fix the problem without using extreme measures. (See our "Poor Support Isn't A Dead-End" sidebar for alternative resources.)

Don't Give Up

To help boost your chances of hanging up with a solution in hand, make the call when you're prepared and keep the rep on the phone until the problem is solved, even if that means you have to offer suggestions to spur more ideas. With some practice, you can almost guarantee success with just about every support call you make. ❚❚

BY CHRISTIAN PERRY

Your Best Bet

Avoid Problems In The First Place

You can deal with PC problems in one of two ways: Either react to them after they have already begun to wreak havoc with your system or prevent them from happening in the first place. Unfortunately, most computer users choose the former. As a result, they end up getting caught in the quagmire of automated calling systems, long wait times, and finger pointing that has come to characterize the computer industry's tech support services. That's why we heartily recommend dealing with problems before they strike.

Research & Reputation

The first step in avoiding tech support is to buy products that are unlikely to need it. Identify these products by conducting a little prepurchase research. Start by gathering general info about potential products. Read product reviews to determine which ones have earned the approval of computer experts. Ask sales reps at computer stores to identify programs and peripherals they have installed on their personal computers. Talk to friends and neighbors about their favorite software and hardware. Use the information you receive to compile a list of recommended products.

Next, focus your research on particular programs and peripherals. Visit the FAQs (frequently asked questions) and support areas of each product's Web site so that you can learn about its common problems and corresponding solutions. Pay particular attention to compatibility issues; you should avoid products known to conflict with the software and hardware that are already part of your system. You also should visit the Microsoft Help And Support site (http://support.microsoft.com) and search the Knowledge Base for articles about the products you're considering. The articles will reveal known conflicts (if any) that exist between your version of Windows and the hardware or software in question.

Finally, we strongly encourage you to purchase products from established companies with broad brand recognition. Many of these companies have reputations to uphold and stockholders to satisfy. As a result, they're unlikely to release products that will cause serious problems with your PC. Moreover, these companies are likely to take preemptive measures to rectify post-release problems as soon as they are identified.

Just as we encourage you to stick with products from recognized companies, we also discourage you from downloading or purchasing products from companies with little or no name recognition. If you find an alluring product from an unrecognized manufacturer or developer, we suggest that you wait to download or purchase the product until it has been reviewed by several reputable sources, such as our own *Smart Computing* (http://www.smartcomputing.com), as well as WinPlanet (http://cws.internet.com) and Lockergnome (http://www.lockergnome.com).

Get Registered

After purchasing and installing a product, it's imperative that you record your purchase with the manufacturer or developer by submitting a warranty card or registering it electronically. The registration process ensures that you'll receive relevant product news and updates as they become available.

Many users skip the registration process because they fear it will lead to an increase in junk mail, telemarketing calls, and spam. In most cases, this fear is unfounded. The only thing you have to fear about the registration process is that by skipping it you could miss out on the vital news and updates you need to fix bugs, install enhancements, and avoid security threats. Reputable hardware manufacturers and software developers want to protect the privacy rights of their existing customers and won't sell or share confidential information without the customer's permission. Just make sure you opt out of the so-called "special offers" when given the chance.

A Date With Updates

Of course, the registration process is just a starting point. You also must keep your system current with all of the relevant Windows updates. Fortunately, you have a friend in the Windows Updates utility. Access the utility by visiting the Windows Update site (http://windowsupdate.microsoft.com). Click the Scan For Updates link and wait for Microsoft to report the updates your system is lacking. When the scan is complete, select the Critical Updates And Service Packs link. Scan the resulting list of updates to see what you're getting, click the Review And Install button and, if necessary, click the Install Now button. A Windows Update dialog box will display a pair of progress indicators. Restart your computer when the installation is complete.

If that seems like too much effort, take advantage of the Automatic Updates feature in Windows Me/XP. (The utility is not available in Windows 98.) In WinMe, you can set it up by opening the Control Panel and double-clicking the Automatic Updates icon. In the resulting dialog box, select the Automatically Download Updates And Notify Me When They Are Ready To Be Installed option and click OK. Activate the feature in WinXP by opening the Control Panel and double-clicking the System icon (in the Performance And Maintenance category). Then, choose the Automatic Updates tab, make sure the Keep My Computer Up To Date option has a check mark next to it (if applicable), and select the Download The Updates Automatically And Notify Me When They Are Ready To Be Installed option. Click OK.

Once activated, Automatic Updates will search for, retrieve, and install the latest Microsoft updates every 24 hours.

(*NOTE: You must install the WinXP Service Pack 1 before activating Automatic Updates in WinXP. You can download the service pack from the Windows XP Service Pack home page at http://www.microsoft.com/windowsxp/pro/downloads/servicepacks/sp1/default.asp.*)

Take It Easy

Your car won't last long if you drive recklessly, brake hard, and fail to perform such routine tasks as changing its oil every few months. So, why is it a surprise that a PC—a mechanism as complex and sophisticated as a motor vehicle—won't last very long if you load it with buggy software and pack it full of conflicting hardware?

Treat your PC gently if you want to avoid problems that come with excessive wear and tear. That means, among other things, limiting your hardware installations and upgrades to those that are absolutely mandatory. You'll end up with driver conflicts, malfunctioning hardware, and error messages if you indiscriminately plug USB (Universal Serial Bus) devices, expansion cards, and storage drives into every available port, slot, and bay on your system.
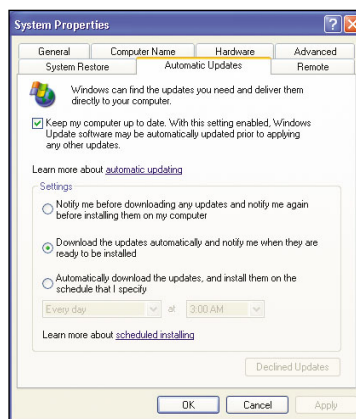
Take the effort out of updating your system by activating the Automatic Updates feature in Windows Me/XP.

Likewise, restrict software installations to those that are absolutely necessary, such as an office suite, antivirus utility, firewall, and personal finance software. Not only that, you should avoid the vast majority of freeware, shareware, and beta software that comes your way. Many freeware and shareware products come loaded with **adware** (software designed to track Internet activity and display relevant pop-up ads) or **spyware** (software that

surreptitiously installs itself for the purpose of tracking online behavior) and are often just plain buggy. Prerelease beta programs have a high propensity for causing trouble because their developers haven't tested them adequately. Abstaining from these programs is a sure way to decrease the crashes, errors, and unexplained behaviors that cause users everywhere so much angst.

Whatever hardware and software you choose to add to your system, take the time to reboot your computer between every installation. Hold off on adding more software or hardware for a couple of days or so, too. Doing so gives you a chance to work out kinks, download updates, and identify a problematic program or component before adding more to the mix. It also gives your system plenty of time to prove that it can support the extra appendage.

Know Your Limits

Another aspect of treating a PC gently involves respecting its limits. To do that, you must be aware of what its limits are. You should know the type of processor your system has, the amount of memory it has, what version of Windows is installed, and how much free space is currently available on the Windows drive (the hard drive on which Windows is installed). Keep these specifications in mind when shopping for hardware and software. Review the system recommendations listed on the box of each product you consider buying and avoid the products that demand more than your system is able to give. If your PC has 128MB of RAM, for instance, you should avoid installing programs that run best with 256MB of memory. To minimize lockups and crashes, always defer to system recommendations, which are higher—sometimes much higher—than the listed system requirements.

Preventative Maintenance

We've said it before and we'll say it again: You must perform regular

system maintenance if you want to avoid problems. You need to scan for drive errors and viruses once per week, defragment the hard drive a couple of times per year, and delete unnecessary files and programs on an as-needed basis. Take advantage of Windows' built-in maintenance utilities for most of these tasks. For example, scan for drive errors by running the ScanDisk utility. Open My Computer, right-click the icon for the drive you want to scan, and select Properties. On the Tools tab, locate the Error-Checking Status (in Win98/Me) or Error-Checking (in WinXP) heading and click the Check Now button. Then, in the next dialog box, click the Start button.

You can access Disk Defragmenter the same way. Locate the Defragmentation Status (in Win98/Me) or Defragmentation (in WinXP) heading and click the Defragment Now button. Disk Defragmenter will rearrange the data stored on the selected drive so that Windows can access it more quickly.

The easiest way to eliminate unnecessary files and programs is with the assistance of Disk Cleanup. Open the Start menu and click Programs (All Programs in WinXP), Accessories, System Tools, and Disk Cleanup. When the utility opens, it may ask you to select the drive you want to clean; choose a drive and click OK. It then will present a list of file categories. Review the categories, which include Temporary Internet Files and Downloaded Program Files among others, and select the ones you want to delete. Click OK.

To remove unwanted programs, choose the More Options tab and click the Clean Up button listed under the Installed Programs heading. The Add/Remove Programs Properties (in Win98/Me) or Add Or Remove Programs (in WinXP) utility will appear. After reviewing the list, highlight the programs you no longer use and click the Add/Remove (typically labeled as Remove or Change/Remove in WinXP) button to get rid of them.

(*NOTE: Never attempt to uninstall a program by deleting its folder from your hard drive; that's a sure way to end up in trouble. Instead, use the Windows uninstall utility, as described above, or the program's own proprietary uninstall feature.*)

Refer to the users manual that came with your antivirus utility for instructions about running a weekly virus scan. In addition, you should update your antivirus utility daily or whenever updates are available.

It's Never Too Late

Even under the best conditions, your computer will encounter the occasional error or crash. How you respond to these minor glitches often determines whether you will eventually need to call technical support. Start by taking note of what you were doing at or immediately prior to the time you noticed the error message, crash, or peculiar behavior. Did you recently change the system configuration by editing the user settings, for instance, or by removing an application you no longer needed? If so, you should restore your PC to its prior working condition and reevaluate the change. Or did you recently add a new piece of hardware or software to the system? If so, you should refer to the users manual for a quick fix or check the product's support site for recent updates that might resolve the situation.

What if you didn't make any changes to your system? In that case, shut down your PC and let it rest for 10 seconds or so before starting it back up. Sometimes a brief break is all it takes to get your system running smoothly again. You certainly don't need a support technician to tell you that. ‖

BY JEFF DODD

Do's & Don'ts

Avoiding tech support is often a matter of practicing good computing habits. Make these habits part of your routine by following the do's and don'ts we list below.

Do update your software regularly.
Don't install software unless you absolutely need it.

Do keep your antivirus utility up-to-date.
Don't download freeware, shareware, and beta software unless it comes from a reputable developer.

Do use the Shutdown menu to reboot your PC between software and hardware installations.
Don't turn off your PC by pressing its power button or pulling the plug.

Do perform system maintenance on a regular basis.
Don't smoke, brush your cat, or leave the windows open in your office. Smoke particles, pet dander, and dust can clog up the PC's cooling fan, causing your system to overheat and spit out errors.

Do respect your PC's technical specifications by obeying software system recommendations (which are often higher than system requirements).
Don't fill a hard drive to more than 90% of its capacity. Drive errors are more likely to happen when storage space is at a premium.

**More than a monitor,
it's a window to your memories.**

Help
Yourself

Take Tech Support Into Your Own Hands

A n old joke involves a preacher on his knees in the midst of a torrential downpour. Soon a man who is fleeing the area in a car approaches the preacher. "Hop in," the man says. "No thanks," the preacher replies, "God will save me." So the man drives away.

As the water rises around him, the preacher is approached again, this time by a man in a boat. "Climb aboard," the sailor says. "No thanks," the preacher replies, "God will save me." The sailor shrugs and steers his boat toward higher ground.

The rains continue and the waves become higher. A man in a helicopter spots the preacher in the water and drops a ladder to him. "Grab hold!" the pilot yells through the noise of the storm. Once again, the preacher replies, "No thanks. God will save me."

Well, eventually the flood drowns the preacher, and he finds himself standing in front of God. "Why didn't you save me from the flood?" the man angrily asks God. "I tried," God says. "I sent a car, a boat, and a helicopter. What else did you want?"

In the quest for technical support, many of us make the mistake of behaving like the preacher in this joke. We beseech software developers and hardware manufacturers for assistance but refuse to take advantage of the countless self-help resources they put at our disposal. The fact is that computer users of the 21st century have no shortage of available support options. All we have to do is reach out and take advantage of them.

Users Manual & Help Menu

Reputable companies have made a practice of bundling basic help-yourself technical information with the products they sell. Hardware issues, for instance, are typically addressed in the Troubleshooting or FAQs (frequently asked questions) section of a product's users manual.

As for software, help is usually as close as the F1 key. Pressing F1 is the fastest way to access an active program's integrated support resources. Alternately, you can access the support resources through the Help menu on the program's toolbar. Either way, the resources typically consist of informative articles describing the program's various features and step-by-step guides outlining the methods for resolving common problems.

Windows Help And Support

Each Windows version comes bundled with its own collection of support resources. To access these resources, open the Start menu and click Help (in Windows 98/Me) or Help And Support (in Windows XP). The resulting dialog box provides access to an assortment of intuitive guides that can help you fix problems, perform basic OS (operating system) functions, run maintenance utilities, and access troubleshooters.

Each troubleshooter is an on-screen interview of probing questions, multiple-choice answers, and corresponding instructions that help you diagnose and resolve problems. Examples include the Display Troubleshooter, the Print Troubleshooter, and the Startup And Shutdown Troubleshooter.

To view a list of troubleshooters in Win98, open the Contents tab of the Windows Help dialog box and click the Troubleshooting and Windows 98 Troubleshooters links. No similar list exists in WinMe/XP. Microsoft chose to organize the support resources, including troubleshooters, by topic when it designed WinMe/XP.

To access the Modem Troubleshooter in WinXP, for instance, open the Help And Support Center, click the

Fixing A Problem link, and open the Networking Problems category. Acquaint yourself with Windows Help And Support (in WinMe) or the Help And Support Center (in WinXP) so that you know where to find relevant troubleshooters when you need them.

Microsoft Help And Support

The third place you should look for assistance when confronting a PC problem is the Microsoft Help And Support site (http://support.microsoft .com). This site contains a vast array of

Windows troubleshooters, such as Windows XP's Networking Troubleshooter, help you diagnose and resolve common problems by leading you through a simple question-and-answer process.

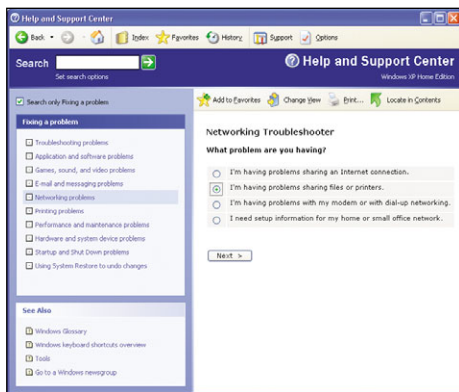self-help support materials for every program in Microsoft's current product catalog. Read FAQs, join a Microsoft support newsgroup, and contact customer service (for help with nontechnical issues). The site also presents Microsoft's latest downloads and updates. These post-release add-ons deliver fixes for security breaches, bugs, and compatibility conflicts. As such, they are crucial to maintaining a high level of performance in your Microsoft applications, including Windows.

The most important component of the Microsoft Help And Support site is the Knowledge Base, a searchable database of support articles, each of which corresponds to a Microsoft product or family of products. You can define your search by several criteria, and Knowledge Base presents a list of articles that pertain to the subject in question.

For best results, take the time to read an article completely before launching into the prescribed fix. Many of the solutions involve advanced troubleshooting techniques (such as command-line programming) that you may not feel comfortable performing. Don't try a solution if you fear that you won't be able to properly complete it. Otherwise, you risk creating even more problems for your system.

Developer Or Manufacturer Sites

Not every PC problem is Microsoft's fault, so when you encounter one that involves a program or device from another company, you'll have to look elsewhere. A growing number of hardware manufacturers and software developers, including Corel, Dell, Sony, and Symantec, have created their own Knowledge Base-like online support structures to help users find solutions to problems caused by their products.

When browsing a manufacturer's site or a developer's site for assistance, look for a link or button labeled Support. This has become the universal pointer to self-help materials. Once inside the Support area, you'll often find a host of driver and update downloads, FAQs, reference materials (including users manuals and installation guides), hints and tips, and solutions to common problems. Always download and install the latest product updates before undertaking a manual fix.

Third-Party Support Sites

A final resource for technical assistance is a third-party support site, such as Experts Exchange (http://www .experts-exchange.com), Computing .Net (http://www.computing.net), and our very own SmartComputing.com Q&A Boards (http://www.smartcom puting.com). These sites provide an open forum where you can post your technical quandaries. If you're lucky, other users who have encountered similar problems will share their detailed solutions with you (but it may take several days to get a response). Many sites catalog these online discussions in a searchable database so future visitors can benefit from the information.

The success of a third-party support site depends on two things: the quality of the questions and the quality of the responses. The best queries are detailed and thorough. Be exact when describing the contents of an error message, for instance, and bundle each question with relevant background information, including technical specifications and a description of recent changes to the system configuration. The best responses, of course, are those that are correct. You can increase the odds of getting a correct response by sticking with a reputable site that attracts a bevy of experienced computer users. You also may want to submit your question to multiple sites so that you can check the proposed solutions for discrepancies.

In any case, proceed with caution when implementing the instructions you receive from a third-party site. Ask for clarification if you are confused by a suggested solution, and *always* back up your data before making any changes.

Make It On Your Own

You may feel a bit awkward the first time you use our support options to resolve a technical issue on your own. That's expected. Self-help support options take us out of our comfort zone and require us to claim responsibility for fixing our PC's problems. But once you get the hang of answering your own questions, you'll find that the do-it-yourself method is faster, more convenient, and more reliable than navigating an automated calling system, waiting on hold, and describing your problem to a technician who may or may not give you the runaround. ▐▌

BY JEFF DODD

A Good Front

Create CD & DVD Labels In A Jiffy

I t's easier than ever to rip music and create compilations, make videos, and back up your important data to CD or DVD. The recordable drives are fast and the media is cheap. Just look around, and I bet you'll find dozens of homemade discs scattered about. But how in the world do you tell them apart? Indelible marker scrawls look awful, and sticky notes, well, aren't very sticky. If you want to make a real impression on family members and co-workers, use a label maker application to create professional-quality disc labels and liner notes for your jewel cases. There are several respected products out there, but let's take a look at Roxio's Label Creator utility, part of its Easy Media Creator 7 digital media software suite.

If you want to make a real impression on family members and co-workers, use a label maker application to create professional-quality disc labels and liner notes for your jewel cases.

Getting Started

One of the most powerful attributes of Roxio's Label Creator is its highly integrated operation, which is capable of handling numerous layouts in the same project. Some labeling programs only let you design one label or insert at a time. But with Label Creator, you can simultaneously create a label and insert (even multiple labels and liner notes), sharing themes, images, and text content among your selected items. This saves a lot of time, reduces errors, and helps achieve a uniform appearance between labels and liner notes. Label Creator supports CD and DVD labels, inserts, and booklets. For this project, I'm going to label an anniversary mix CD for my wife.

Launch Label Creator and select your layouts. A default audio CD template appears, so I'll add a front insert. Click the Show/Hide tab, check the Front box, and then click OK. A default front insert tab appears alongside the label tab. Switch between layouts simply by clicking the respective tab. It's easy to expand the project by selecting other items from the Show/Hide tab (such as a rear insert), but let's just work with these two layout items.

Select an optional template and theme. Label Creator offers templates for a variety of projects. There is also a library of themes with varied color and layout schemes. If you opt for another template or theme, your choice will apply to all of your selected layouts (such as label, front insert, rear insert, and so on). Let's keep this project simple and stick with the Audio Template using the Default Theme.

Let's save the project at this point. I really haven't done anything yet, but it's a good time to at least name the project. Click File and Save Project and select a name for the project file (such as Anniversary Mix). As the project progresses, save at any time by clicking File and Save Project.

Let's choose the content for our label and insert. Label Creator works in
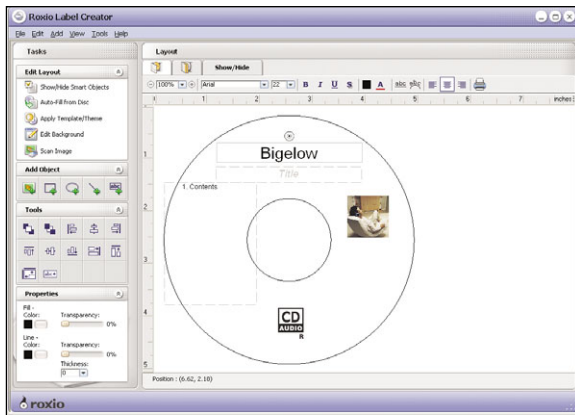
Roxio's Label Creator provides powerful timesaving tools to create complex and elegant disc labels and inserts.

terms of Smart Objects. Rather than making image and text boxes by hand for each label or insert, I'll just tell Label Creator which common objects should be on each label and insert. Click Show/Hide Smart Objects. This opens a dialog box of available objects that you can add to (or omit from) the label's layout. I'm already pretty happy with the default layout, but I'd like to add a date, so just check the Date checkbox and click OK: The current date appears in a default location on the disc. Let's also add the date to the front insert. Just select the Front Insert tab, click Show/Hide Smart Objects, check the Date box, and click OK.

Filling In The Blanks

Now I need to fill in some content. Double-click the Artist Smart Object to edit the object. There are various artists in my anniversary mix, so I'll pick a creative title rather than a specific artist for this project. I just type **"From This Moment"** (our wedding song) and click OK. Now double-click the Title Smart Object and edit a new title. I've been married five years, so I'll call the disc "Five Years Of Love." Don't gag—women live for this stuff. Click OK. To change the date (I'll insert my anniversary date instead), just double-click the date and select another date from the drop-down menu.

The slick part about Smart Objects is that they are synchronized across each

label and insert layout in your project. When the user edits an object on one layout (such as the disc label layout), that change occurs on every other layout (such as the front insert layout) with the same Smart Object. Once you've changed the label, switch to the front insert by clicking its tab. See that the Artist, Title, and Date objects have automatically changed to match the corresponding objects on the label. Don't forget to save the project as you go.

Now I'll list the audio tracks in my table of contents. Each track has a title, artist, and time. Fortunately, the Track List is another Smart Object that will take all of this free-form information. Double-click the Track List object. The editor opens and lets you enter information about each track. There's no need to number the tracks—the object will do that for you. The text flows along the disc's curve, so there's no need to worry about any text falling off the disc in the spindle area. Enter your tracks in the editor and click OK when you're done. If you make a mistake, just return to the editor and make any changes.

Smart Objects go a long way toward simplifying layout design, but you may not like the default options for every Smart Object. For example, you may prefer different font styles and sizes for certain projects. The default Arial font looks fine, but I'd like a stronger look for the Artist object. Just highlight the Artist object and select a new font from the drop-down menu. I chose Impact instead of Arial. Want the text a little larger? Just select a new font size from the drop-down menu. Finally, I want to de-emphasize the

Title object a little bit without making the text smaller, so I'll change the text color to a dark gray (rather than black). Highlight the Title object, click the Change Text Color button, and select another color from the available palette. Remember that changes to the font style, size, color, and other attributes do not transfer to other layouts in the project. For this project, I'll need to manually make the same changes to the Artist and Title on the front insert.

Now it's time to select a new Content Illustration (the picture on the disc and front insert). The default shot of a reclining dude in his headphones really doesn't scream romance to me, so I'll pick something a bit more appropriate for the occasion. Double-click the Content Illustration and Browse from a list of available images.

I have a rose bouquet photo that would be perfect, so I'll select it and click OK. The new image appears on the label and the front insert.

The simple white background is a little too plain for this project, so I'll select a new background image. Click Tools and select Edit Background. You can select a solid color for the background, but I'm an old softie, so I'd prefer a wedding-related background. Check the Use The Following Image As A Background Image checkbox, click Browse, and navigate to your favorite photo. The Label Creator comes with a wealth of backgrounds, so I browsed to the background library, selected the default wedding disc background, clicked Open, and selected OK to apply it to the layout. Because I didn't opt for a specific theme when we started this project, the new background did not transfer over to the front insert layout, but it's easy to switch over to the front insert layout and repeat the process to apply the wedding background there, as well.
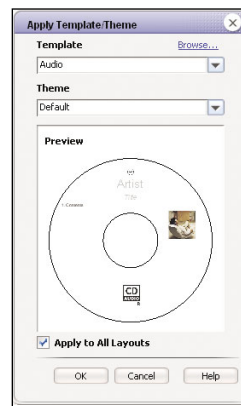
Label Creator offers a library of useful templates and attractive themes that will jumpstart just about any project.

The project is looking nice, but it needs a couple of tweaks to put the finishing touches on this masterpiece. Label Creator provides a selection of objects and tools that can further customize your layouts. The Add Object feature lets you put additional images, rectangles, circles, lines, and text objects into the layout. A suite of alignment tools lets you perfectly position each object. I'll add a text message to the label. Click the Add Text Object button, and a new text box appears. Select the box and drag and resize it to your liking. If the box is small, select a smaller text size (and font style). I'll double-click the box and enter my personal message.

Printing & Labeling

Once the project is complete, it's time to print the label and front insert and apply the adhesive label to the disc. Click Print Your Layouts to start the Print Wizard. Basic printer selection and setup is handled at the top, so select the correct printer. Now select the layouts to print. The Disc is selected by default, but I checked the Front box because I also want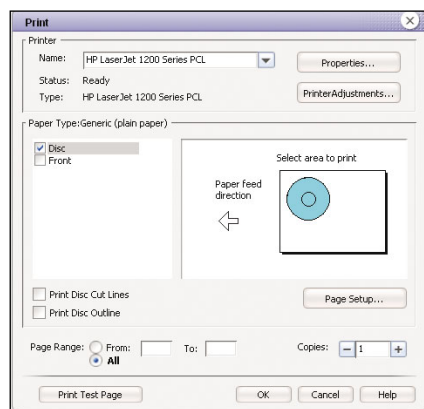ed to print the front insert. If there were other layouts in the project, you could select them, too. Let's handle the Page Setup. I don't want to print a label

Configure your labels and print them to your favorite color inkjet printer.

to plain paper, so I click the Page Setup button and select my NEATO CD

Labels – 2 Up from the Current Paper Type drop-down menu. The Label Creator also provides horizontal and vertical corrections (if necessary) for exact alignment with the labels.
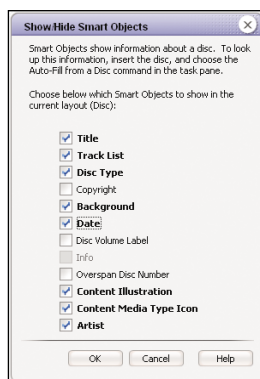
Use the Show/Hide Smart Objects dialog box to add or omit common Smart Objects from your layouts.

Save money by printing plain paper test pages on your color printer in black-and-white mode (use an economy or ink-saving mode if available). Black ink is a lot cheaper than color. Then, hold the test page up to a sunny window against a blank label sheet. This is a quick way to check the alignment without wasting an expensive label sheet. If the alignment is off, tweak it and try another test page. Repeat the process until the labels print exactly where you want them to. Enable the high-quality color mode to print the actual labels. Be sure to let the ink completely dry before trying to apply it to a disc. Otherwise, you risk ugly smudges.

Cut out the front insert and slide it into your jewel case. Now it's time to apply the disc label. No matter how hard you try, centering the label and applying it without bubbles or creases is harder than it looks. Tools such as the NEATO CD Label Applicator are often included with label kits and make perfect centering a snap. Prevent the label from curling by placing the printed side down on a flat surface, and peel away the backing from the label. Put the label on the applicator printed side down (adhesive side up)—the label fits around a wide spindle. Put the disc above the label onto the narrow portion of the spindle. Now push the spindle down to move the disc into contact with the label. This should center the label and affix it to the disc without bubbles or creases. ❚❚

BY STEPHEN J. BIGELOW

Printing Directly To Disc

If you create a large number of discs and need a more professional image (or just don't want the hassle of printed labels), opt for a direct-to-disc printer. Primera Technology (http://www.primera.com) produces a line of inkjet disc printers. Primera's $1,495 Signature IV can print in full color to 1,200 x 1,200 dpi (dots per inch) and print a basic disc in less than 30 seconds. When there is a volume of discs to print, Primera's $1,495 Composer XL 100 disc autoloader automates volume printing with printers such as the Signature IV. Of

Primera's Bravo II direct-to-disc inkjet printer can duplicate and print up to 50 CDs/DVDs at a time. (Courtesy of Primera Technology, Inc.)

course, Primera's $1,695 Bravo II combines 4,800dpi inkjet disc printing and automatic CD/DVD duplication (up to 50 discs) in one standalone USB (Universal Serial Bus) 2.0 device.

While some direct-to-disc printers employ dry thermal color printing, most use inkjet technology to paint on the disc surface. But this can pose several problems. First, discs must provide a clean printable surface. Manufacturer's logos, coloring, or other preexisting printing on the disc surface (even finger smudges) will ruin the ink jet image, so select completely blank discs. Second, ink may not readily dry on a plastic disc surface. You may need to allow several minutes for the ink to dry or select printable surface CDs or DVDs as recommended by the printer manufacturer. ❚

Roxio PhotoSuite 5

Knowing Your Options ●

Image Processing

Beginner

5 for
Win98/Me/NT
4.0/2000/XP

Typically, we show you how to use Roxio PhotoSuite 5 to perform one task, such as organizing photos into albums, creating video CDs, or touching up facial photos. Every once in a while, however, it's useful to step back a bit and take a look at the program as a whole. For example, maybe you don't want to be notified each time a collage is about to be flattened or you want PhotoSuite to be the program automatically associated with some image files. So this month let's take a look at how you can customize the software so it best meets your needs.

The Options dialog box lets you set your overall personal preferences. To open the Options dialog box, select Options from the File menu. The dialog box consists of eight sections: Main, File Locations, File Associations, Notifications, Slide Show, Edit, E-mail, and Video CD. On each tab, you simply select the desired preferences. Then, be sure to click Apply and click OK for the preferences to take effect.

The Main tab is where you can set global preferences—options that appear through the program. PhotoSuite has the ability to play sounds when you select various interface items, but by default this feature is not enabled. Place a check mark in the box Play PhotoSuite Sounds to enable it. Other options on this tab let you change the number of recently opened or saved files, hide or display the tips that appear when you hold the pointer over an item on the interface, change the method you use for transferring photos from a scanner, and check for updates online.

The File Locations tab lets you specify where photos are saved. Unless you customized PhotoSuite during installation, files you work with are automatically saved on your hard drive in a location that probably looks like C:\DOCUMENTS AND SETTINGS\USER\MY DOCUMENTS\MY PICTURES. But what if you want to save the files you transfer from devices, for instance, to a different location? Highlight this file category and click the Modify button. The dialog box prompts you to browse your system. Locate the desired new location or folder, select it, and click OK to return to the Options dialog box.

You can also use the Options dialog box to associate commonly used image file formats with PhotoSuite. Let's say that when you download a JPEG (Joint Photographic Experts Group) file from the Web or save it from an email, you usually want to open it in PhotoSuite. On the File Associations tab, place a check mark in the JPG box and any other desired file formats. When you launch the file via Microsoft Explorer, PhotoSuite automatically launches and displays this file.

In our opinion, if the Options dialog box could only have one tab, the Notifications tab would be it. After you've used the software for some time, notifications such as Internet Connection Is No Longer Required can be annoyances. Turn off PhotoSuite's warning messages by placing check marks in some or all of the Don't Remind, Don't Warn, and Don't Ask boxes.

In recent columns on creating slideshows or video CDs, we touched a bit upon some of those options, so we'll skip discussion of the next tab, Slide Show, and the last tab, Video CD, here. But you can change options related to those two tasks in the Options dialog box.

The Edit tab is where you can specify photo resolution. Often, a photo you save on your hard drive will have an assigned resolution in dpi (dots per inch). But if the photograph doesn't have this data, you can specify the default resolution so that when you open the photograph in PhotoSuite, it appears in high resolution (600dpi), low resolution (72dpi), or somewhere between by clicking the appropriate radio button. If you want to change the default measurement unit from inches to centimeters or pixels during photo editing, select the desired unit from the drop-down menu.

If you send photos by email, you'll want to become familiar with the E-mail tab. If your ISP (Internet service provider) doesn't let you send messages more than, say, 1,024KB, take advantage of PhotoSuite's warning by placing a check mark in the Warn Me When My Total Attachment File Size Exceeds My E-mail Limit box. The E-mail tab also lets you specify photo dimensions. ∎
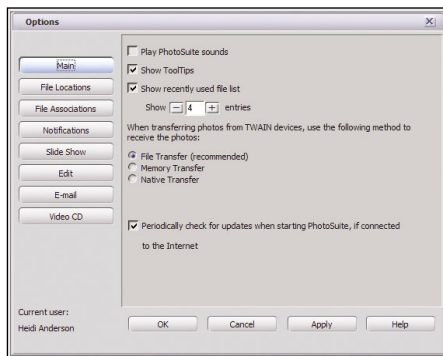
The Options dialog box lets you customize the software so it works best for you.
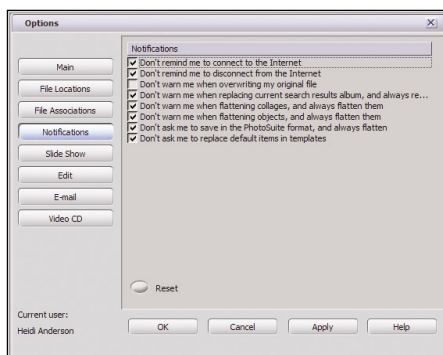
Rid yourself of unneeded warnings via the Notifications tab.

BY HEIDI V. ANDERSON

Microsoft Word 2002
Keep Track Of Changes, Part 2 ●

Word Processing

Intermediate

2002 for
Win9x/Me/
NT 4.0/2000/XP

Last month we talked about how to perform basic tasks for tracking changes within a document. In this article, we show you how to customize the process. Open a document in Word and click View, Toolbars, and Reviewing. Click Show and Options on the Reviewing Toolbar to bring up the Track Changes dialog box.

Define how you want insertions and changes in formatting to appear in the Track Changes Options section. Insertions options are None, Color Only, Bold, Italic, Underline, and Double Underline. Deletions always display with a strikethrough.

Color My World

The Color section lets you determine what color your changes will be and also how you want to view changes other authors made. Use the first selection, with the two-colored box and the words "By Author," so that changes will show up on your computer according to the color setting on the reviewers' computers. So if the reviewer makes insertions, deletions, and formatting changes on the document in pink, the changes will show up in pink on your computer. You can readily tell who made what changes with this option as long as you assign everybody a different color.

Click Tools, Protect Document, and Tracked Changes and enter a password if you want to limit reviewers to using the tracking feature rather than letting them make actual changes to the document.

You can specify a single color for changes if you don't want to go the multicolored route. Choose a color from the Color drop-down menu in the Track Changes dialog box, and all changes will appear on your PC in that color regardless of the color reviewers use. Changes on the reviewers' PCs will show colors according to the settings on their computers. Choose Auto in the Color drop-down menu if you want changes to appear according to the same settings as the text being changed.

The Formatting option lets you set whether you want changes in formatting, such as italicizing or changing a font, to be marked. The options are the same as for Insertions.

Determine how the Track Changes functions work with the Track Changes dialog box.

Up, Up & Away

Balloons, which point out where users have made edits, appear by default in the Print Layout and Web Layout views. The Balloons and Printing (With Balloons) sections let you determine whether and where balloons will appear, whether lines connect the balloons to the text, how wide the balloons are, and what the paper orientation will be.

Check the Use Balloons In Print And Web Layout box if you want the balloons to appear. Selecting this box makes the rest of the balloon options available.

The Preferred Width default for balloons is 2.5 inches. Set whether you want the width expressed in inches or percent of the page in the Measure In drop-down menu. Word adjusts text width to accommodate the balloons. Setting a lower width will make the balloons narrower but deeper. You may want to play with balloon width until you get the right combination of text width and balloon width.

Balloons appear by default on the right margin, but you can use the Margin drop-down box to set it to the left side. There is no way to set the balloons to always appear on the outside page margins of documents constructed of facing pages.

By default, Word uses lines to connect the balloon to the changed text. You can uncheck this selection to eliminate the lines.

Paper Orientation determines whether your printed copy is going to appear in the portrait or landscape configuration. It contains the Auto, Preserve, and Force Landscape options. Use Preserve to force Word to print in the orientation specified in the Page Setup dialog box. Use Force Landscape to print in the wide format despite what is specified in the Page Setup dialog box. Use Auto if you want to give Word the option of choosing between portrait and landscape orientation.

The last section in the dialog box is Changed Lines. Settings here affect the line that appears in the margin when you print a document with changes showing. Click the drop-down box next to Mark to select from None, Left, Right, or Outside of the page. Outside works only if Mirror Margins is set in the Page Setup dialog box. Use the Color drop-down menu to specify the line color.

Tracking changes can help you get a handle on changes you and other users make within a document, making a tough job just a tad easier. ▌▌
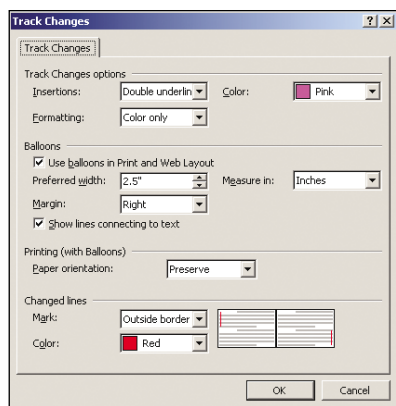
BY TOM HANCOCK

Print Shop 15 Deluxe
Organize Your Projects •

You will collect quite a few projects on your hard drive once you have used Print Shop Deluxe for a while. Print Shop anticipates the need for organization with features to help you store your projects so that they are logically grouped and easy to find.

Most of the work we will do in this article revolves around the Project Gallery. Open it by starting Print Shop and clicking the Search Projects button on the left side of the Project Picker. You can also access the gallery from the Design Desk by clicking File and Advanced Project Search.
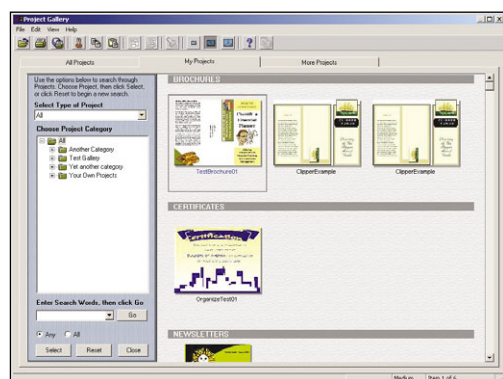
The My Projects section in the Project Gallery holds your projects in categories that you define.

The Project Gallery contains three sections. We are interested in the My Projects section for this article. This is where you can see all of the projects you have created and saved.

Now let's create a project that we can save to the Project Gallery. Open the Project Picker, click Brochures, and click Next. Click Personalize A Quick-Start Layout and Next. Choose a theme and click Next. Select one of the layouts by clicking it and then click Finish. The project appears on the Design Desk. Make a change to the project, such as adding text or moving a graphic. (For our purposes, it doesn't matter what change you make.)

Click File and Save As. You have the option of saving the file wherever you wish on your computer, just as you would with any type of file. Enter a name in the File Name box. There are additional options in the Project Gallery section at the bottom of the dialog box. Select the Add To Project Gallery checkbox. Click the Category drop-down menu and choose from the available categories. There will be only one category available, Your Own Projects, unless you previously created others. Click Save.

Now let's create a new category. There are two ways to do this: when you save the project and when you have the Project Gallery open.

Create another new project using a QuickStart Layout. Make a change to the project (again, it doesn't matter what you do). Click File and then Save As. The Save As dialog box appears. Click New. The Add User Category dialog box appears. Enter the name of the category you want to create and click OK. Name the project and click Save. You've now saved your project in the category you just created.

To create a new category with the Project Gallery open, click My Projects Click File and New Category. The Add User Category dialog box appears again, letting you create a new category. Enter the name and click OK. The new category appears in the Choose Project Category section.

Move & Rename Files

It's easy to copy or move a project from one category to another. Open the Project Gallery, click My Projects, and click a project once to select it. Copy the project to another category by pressing the CTRL key and clicking and dragging the selected project to a different category in the Choose Project Category box. You can also copy a project to a different category by selecting it and clicking Edit and Copy. Open the category where you want to copy the project and click Edit and Paste.

Move a project to another category by clicking and dragging the selected project to a different category (press CTRL only when copying, not when moving). You can also move a project by cutting and pasting. Select the project and click Edit and Cut. Open the category where you want to copy the project and then click Edit and Paste.

You can rename or delete a category in the Project Gallery. Select the category you want to rename or delete in the Choose Project Category box. Click Edit and Rename Category. The text of the category name becomes available for editing. To remove a category, click Edit and Delete Category. A warning will appear that asks you to confirm whether you want to delete the category. Print Shop will delete all of the projects in the category if you delete a category. They will also be deleted from the hard drive if you check the Delete Project Files From Disk box.

Print Shop provides the means to create a wide array of projects, and with the tips we have provided, you'll be able to easily keep them organized. ▮▮

BY TOM HANCOCK

WordPerfect 10

Add Flair To Graphics

Office Suites

Intermediate

2002 for Win9x/
2000/Me/XP

By default, graphics take up boring rectangular spaces in your documents. You don't have to settle for this standard: WordPerfect offers Border, Fill, and Wrap tools to help you add flair to graphics boxes. When your graphic or clip art is getting lost among the text, Borders and Fills help you set it apart. Wrap changes the way text appears around the graphics box.

Before we jazz up the graphics box, you'll need to actually insert a graphic. For the examples below to work, it's best if you insert a graphic into a document that has some text. Otherwise, insert a graphic into a blank document and type some nonsense words to take up space.
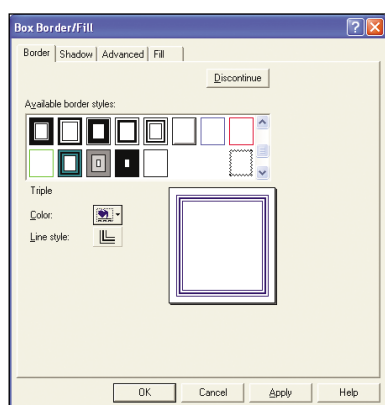
The Box Border/Fill dialog box offers several ways to set your graphics apart from the text.

Borders

To reveal the Graphics toolbar, click an image. Click the Border Style button, and WordPerfect displays the available borders. Click More on the bottom of the palette to open the Box Border/Fill dialog box. You also can open this dialog box by right-clicking the graphic and choosing Border/Fill from the pop-up menu.

To add a border, just click the style you want to use. If you're using the Border palette from the property bar, you can preview the style within the document itself by pointing at one style on the palette. Otherwise, using the Box Border/Fill dialog box, select from Available Border Styles and then click Color to choose a color for the border.

With the Box Border/Fill dialog open, click the Advanced tab to see additional options; for example, you can round the corners of your graphics box just by checking the box labeled Rounded Corners. Another option involves changing border spacing. Border space is the area between the border and the text that surrounds the box and the area between the border and the box's contents. If you want more or less white space, choose a predefined spacing or use the arrows to achieve a specific measurement.

The Shadow tab lets you add or change the direction of the graphic box's shadow. Click the one that suits or type a height and width into the appropriate fields. Click OK.

Fill Patterns

Sometimes borders aren't enough or appropriate. In those instances, you may want to create a background, or fill pattern, for the graphics box. A background fills the box behind the image, essentially coloring in the white space that surrounds the image.

Click the Fill tab in the Box Borders/Fill dialog box to see the options WordPerfect offers. Choose a pattern, select colors for the Foreground and Background, and click OK to apply.

Wrap Text

When you insert a graphic into a text document, WordPerfect automatically wraps the text around both sides of the graphics box. To change the way text wraps, select the image. Next, click the Wrap button on the property bar (the button is a triangle inside a box) or right-click the image and choose Wrap. WordPerfect offers five Wrapping Types. Square lines text up straight against the left and right edges of the box; with Contour, the text follows the contour of an image and eliminates excess white space and standard border lines. By choosing Neither, space on both sides of the box is left blank, and text does not flow around it but above and underneath it only. Behind Text lets the words flow through the graphics box, printing text directly over the image, as with a watermark. The final option, In Front Of Text, has the graphic on top of the text, which obscures it.

After you select a Wrapping Type, you must choose from the Wrap Text Around Area options. Left Side, Right Side, and Both Sides are self-explanatory. The remaining option, Largest Side, wraps the text along the side of the image with the longest dimension. When you have made your selections, click OK.

Picture Perfect

Graphics and clip art help break up text, but sometimes the breaks are a little jarring. With the Border, Fill, and Wrap tools, you should be able to find just the right flair to set your graphics off from the rest of the document. ❚❚

By Anne Steyer Phelps

Susan will make sure you're comfy with your Anthro choice.

Yes, life can be this good.

You, your laptop, and a comfy place to work (that's the part Anthro supplies). What more could you need? All Anthro furniture is modular and flexible, so we're delighted to help find the right fit for you. Tell us about your furniture challenges and we'll configure choices for you to consider. (Did we mention our Lifetime Warranty?) Contact our helpful folks at **Anthro.com or 800-325-3841.**

ANTHRO
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GSA contract. Available for OEM applications.

Microsoft Excel 2002
Using Multiple Worksheets •••••••••••••••••••••••••••••

Spreadsheet

Advanced

2002 for
Win9x/NT
4.0/2000/XP

Most Excel users never venture past the confines of a file's top worksheet. After all, who needs more than 65,536 rows and 256 columns?

That feeling is understandable. Information on a single sheet can feel more manageable than data scattered across multiple pages.

Yet, single-page Excel work, as comfortable as it may feel to beginners, is pretty limiting. It leads to a lot of scrolling and creates awkward overlaps of things such as source data and tables showing possible scenarios. Placing information on various worksheets within a workbook file actually makes it easier to find. Putting records for multiple salespeople on separate worksheets within a single Excel file should make your work as easy as flipping through pages in a physical notebook.

Tabs that you can rename or recolor at the bottom of the screen make it easy to jump among pieces of data stored on multiple worksheets.

Worksheet Basics

A workbook is what most people think of as a spreadsheet. Every Excel file is a workbook with three worksheets by default and up to 255 if you go crazy adding new ones. The sheets arrive with simple labels such as Sheet 1, but you can rename them by double-clicking the tabs with the names on them and typing new labels.

To create a new worksheet, choose Insert and Worksheet, and Excel will drop a new sheet in front of the one you're looking at. Move the sheet to another position by clicking its tab and dragging it. To copy an existing sheet, hold down the CTRL key as you click the sheet's tab and drag it to a spot where you want the new sheet to land. It will appear with a name such as Bob Smith (2). You can copy a sheet into another workbook altogether by opening the workbooks in side-by-side windows and pressing CTRL as you drag the sheet's tab to the new workbook.

Get organized with color-coded tabs. Right-click a tab, choose Tab Color, and select a new hue.

Move among worksheets by clicking the tabs or pressing CTRL-PAGE DOWN to move to the worksheet to the right and CTRL-PAGE UP to move one to the left. To eliminate a sheet, click its tab and choose Edit and Delete Sheet.

Add Data & Formulas

Worksheets often require similar formatting, as in the above example where each sheet tracks the same categories of data for a different salesperson. By grouping sheets, you can edit one sheet and let Excel repeat the action on all the others. Let's say you need to list the names of your 20 products on each salesperson's worksheet. Click the tab of the first sheet and then hold down the CTRL key while you click any others you want to select.

Now as you add product names to the cells of one sheet, they'll automatically appear on all the others. The same thing happens if you change a cell's formatting, enter a new formula, or make other changes. To ungroup sheets, click a tab outside the group, or if you selected all the sheets, right-click a tab and choose Ungroup Sheets.

After you've neatly layered data in different worksheets, you may wonder how to easily compare such things as each salesperson's bottom-line results. The solution is adjusting the Excel window to display multiple worksheets. Choose Window and then New Window. You probably won't notice the new window that opens because it opens to the same worksheet you were viewing. Note, though, that the Title Bar text changed from something like Sales Results to Sales Results: 2. To view both open windows, choose Window, Arrange, and select an option such as Horizontal or Vertical. Use each worksheet's tabs and scrollbars to navigate to the information you need to see. You can open more windows by repeating the Window, New Window step.

The worksheet excitement really kicks in when you pull information from various sheets to produce bottom-line results. Here's a simple example: Click a cell on the sheet that will hold the summary and click the Standard Toolbar's AutoSum button. Now navigate to a different worksheet and click the cell holding one of the values you're including in your summary. Don't press ENTER: Just type a comma and then go to another worksheet and click another cell you want to go into the equation. Type another comma and so on until you select all the cells. When you finally press ENTER, the AutoSum function adds them all up, and you get the summary information you need without turning a single page. ▐▌

BY TREVOR MEERS

Paint Shop Pro 8
Use Layers To Create A Collage ●

Image Processing

Advanced

8 for
Win98SE/NT
4.0/2000/Me/XP

Last month we introduced you to the use of layers to add text to images and to make color and tonal changes. Using Paint Shop Pro's layers feature saves you time and effort by combining layers into one image while retaining the ability to make changes to each layer individually. Sounds a bit like a photographic collage, right?

You got it. Although there are numerous other applications for layers, creating collages is an important one. We'll show you how to combine multiple photographs or pieces of photographs into one rich image. We'll do so by creating a collage from pictures we took at a birthday party.

Collage Basics

You have two primary background options for your collage: using an existing photograph or a blank slate. We'll start from scratch. Select New from the File menu. In the New Image dialog box, create a large enough image (we used 800 x 800 pixels, but see what works best for you), make sure the Raster Background radio button is selected, set the color depth to 16 million colors, and click OK. Make sure the Layer palette is displayed by going to the View menu, choosing Palettes, and selecting Layers.

Use layers to combine images into a collage.

Select the images you're going to place on the canvas. Open the first photo you want to use. To select a section of this photo, click the Selection Tool in the Tools toolbar. We chose to use the standard geometric options (we chose Ellipse from the drop-down menu in the Tools Options palette), but you can also make selections using the Freehand tool or the Magic Wand tool. Whichever tool you use, however, we recommend you experiment with the feather value. **Feather** is the width, in pixels, that a selection is faded around the edges. The higher the number, the softer the edges and the better the images in your collage will blend together. If you want hard edges, keep the feather value set to 0.

Copy your selection via the Edit menu's Copy command. Return to your canvas and choose Paste and Paste As New Layer from the Edit menu. This places the layer in the middle of your new image. Open another photo and repeat the process with a second selection.

At this point, you have two images in your collage, and it's likely they're both in the middle of the canvas. One may even be completely obscuring the other. Here's where the Move tool comes in handy. Click the layer you wish to move and select the Move tool from the Tools toolbar. Click and drag in the layer to move the image layer to the desired position. Repeat this process—make selections, add them to the collage, and move them around—with as many image selections as you'd like.

Fine-Tuning Collage Layers

You now have all the elements of the collage in one place, but it's likely you'll want to work with them further. For instance, in our party collage, we wanted to shrink the size of one of the selections so the woman depicted was roughly the same size as the other people in the collage. With her layer selected, we went to the Image menu and chose Resize. We changed the dimensions of the layer so that it was 80% of the original, and we made sure the Resize All Layers box was not checked. We clicked OK, and the layer became smaller.

Rotate layered images using a similar procedure. Select the layer, go to the Image menu, choose Rotate, and select Free Rotate. (If you choose either of the other rotation options, the entire contents of the collage rotates.) Use the radio buttons to select the direction and degrees, uncheck the All Layers checkbox, and click OK.

Another process that will come in handy is knowing how to rearrange the stacking order of layers, that is, which layer appears on top, which is just below it, and so on. Within the Layer palette, click to highlight the desired layer—Raster 1, Raster 2, or any other layer, except for the background layer—and drag it up or down to the new position. Can't remember which layer is Raster 3? Rename it something more memorable by right-clicking the layer and selecting Rename.

Lastly, before you save your collage, keep in mind that some common file formats don't support layered images. When you save a layered file, Paint Shop Pro may flatten the image and you will not be able to edit layers individually after that. While we typically recommend you save your work early and often, you may need to make saving your work the last step in creating your collage. ❚❚

BY HEIDI V. ANDERSON

Quick Tips

Secrets For Succeeding In Common Tasks

Video

Today's high-performance games and other applications often take advantage of acceleration techniques supported by the video card. However, video problems can sometimes manifest themselves as stability and system crash issues. One quick way to test for video problems is to decrease the video acceleration. Right-click the Desktop, select Properties, click the Settings tab, click Advanced, and select the Troubleshooting tab. Decrease the Hardware Acceleration slider one notch at a time and apply your changes. If the system stabilizes, you know that the video system is involved. Upgrade your video drivers (and motherboard AGP [Accelerated Graphics Port] drivers) and try increasing acceleration again.
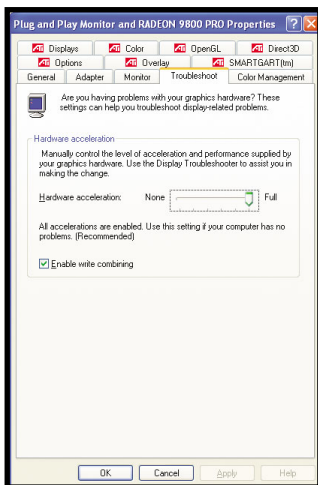
Decrease video acceleration to improve system stability and prevent excess crashing until you can install new drivers.

Outlook 2000

Not getting replies to your important emails? It may be time to repeat the message. If you need to resend a message but don't want the hassle of retyping the entire message by hand, Outlook 2000 provides an easy solution. Simply open your Sent Items folder and locate the message you want to resend. Double-click the message line to open the sent item in its own window. Now click Actions and Resend This Message. A duplicate of the message will appear in another window where you can make any changes to the text, subject, or recipients. Click Send when you're ready to send it again. This is particularly handy when the message is lengthy or the message had a large number of recipients.

Windows Media Player

Multimedia utilities such as Windows Media Player can play streaming media from resources across the Internet. Playback performance will depend on your connection speed—faster connections can play back better-quality images and music. Windows Media Player can automatically detect the connection speed, but detection is not always accurate. If you find that streaming playbacks are slow and choppy, the player may have improperly detected your connection speed. Set the speed manually by clicking Tools and Options. Select the Performance tab, click the Choose Connection Speed radio button, and select your real connection speed

from the drop-down menu. Remember to click OK.

Folders

If those boring manila folder icons on your Desktop are too bland for your taste, go ahead and change them. Right-click a folder, select Properties, and click the Change Icon button on the Shortcut tab. Scroll through the available default icons on your system (or browse to other icons you've downloaded from the Internet). Just highlight the new icon and click OK.

Word 2000

Tired of that plain white background in your Word documents for the Web?
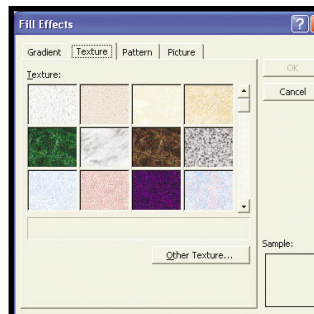

When preparing Web documents, select complementary colors or textures for best impact.

Spruce it up with a subtle color or texture. Open Word 2000 and then click Format and Background. Select a new background color (to appear behind all of your text) or select Fill Effects to choose a Gradient, Texture, Pattern, or Picture. Click OK to implement your changes. They will appear in your document's Web Layout view (not in other views such as the

Normal view or Print Layout view). Use caution when selecting a working background for Web documents. Some effects can be very distracting and may even make the document difficult to read.

CD-RWs

CD-RWs (CD-rewriteables) will typically offer about 550MB of space rather than the 650MB that we've grown accustomed to with CD-Rs (CD-recordables). If you want to fit additional files on the CD-RW, you may be able to apply compression to the disc through the RW utility. For example, Roxio's Drag-to-Disc utility supports compression. Just right-click the Drag-to-Disc icon on your Desktop and select Settings. Check the Turn On Compression box and click OK. Now your files will be compressed when writing to disc, though the amount of additional space may be limited, as some files compress much better than others.
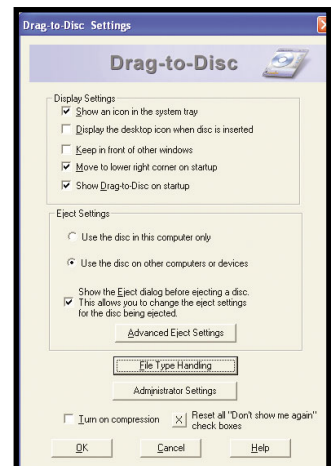
Enable compression to fit additional content onto your CD-RWs (CD-rewriteables).

Keep in mind that compressed files may not be readable on PCs using other RW utilities.

Outlook 2000

You can tailor the way that Microsoft Outlook checks for new messages. By default, Outlook checks for new emails every 10 minutes. This is fairly often and may sometimes bog down other Internet applications. If you'd rather wait a bit longer between checks, click Tools and Options and select the Mail Delivery tab. In the Check For New Messages Every XX Minutes line, enter a new delay (in minutes). For example, to check for new mail once an hour, just enter 60, click Apply, and click OK. If you'd prefer not to have Outlook automatically check for mail, just uncheck the Check For New Messages Every XX Minutes box. Remember that automatically checking mail will send any messages in the Outbox.

Internet Explorer

Web browsers bring global information and entertainment to Internet users everywhere, but there is substantial content that may be inappropriate for children. Internet Explorer provides a Content Advisor feature that can restrict Web sites that include restricted content. Start Internet Explorer, click Tools, click Internet Options, click the Content tab, and select the Enable button in the Content

Advisor area. Click each RSACi (Recreational Software Advisory Council on the Internet) entry (Language, Nudity, Sex, and Violence) and set the slider to specify each level that
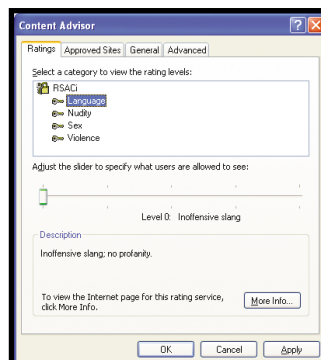
Use the Content Advisor to set the level of Language, Nudity, Sex, and Violence that users are allowed to see in RSACi-compliant Web sites.

users are allowed to see. Click Apply to save all of your settings. Now click the General tab and create a Supervisor password. Otherwise, another user can change the rating levels you've set or disable the Content Advisor entirely. Remember that the Content Advisor only works with Web sites that have registered with the RSACi. It has no way to filter content on an unregistered Web site.

Word 2000

Word provides a tracking feature that monitors and displays changes made to a document by various authors. This eases editing because you can quickly identify any changes. Simply enable tracking by double-clicking the TRK box in the bar below the document. Unfortunately,

other individuals who work on the document can turn tracking off and accept or reject changes. However, an original author or editor can guard against unauthorized changes by protecting the document. Open the document you want to protect and click Tools and Protect Document. Select the feature to protect (such as Tracked Changes), enter a password, and click OK. Now no one else can disable tracking and make unauthorized changes to your document.

QuickTime 6

Movie players such as Apple's QuickTime 6 use RTSP (Real Time Streaming Protocol) to transfer information from the Internet to the player. However, many firewalls, especially corporate firewalls, prohibit RTSP and other unusual transport protocols in an effort to improve network security. If you cannot use RTSP across your firewall, QuickTime lets you select an alternate transport protocol such as HTTP (Hypertext Transfer Protocol). So if you can access the Web, you can also receive streaming media. Open the QuickTime player and click Edit, Preferences, and QuickTime Preferences. Select Streaming Transport from the pull-down menu and click the Use HTTP radio button. Enter a new port ID (if you use anything other than the default Port 80). Just close the dialog box to save your changes. Remember that HTTP is not as efficient as RTSP, so your

movie may not be as smooth when you're using HTTP.

Printers

When you print a document, the printer doesn't print it immediately. Instead,
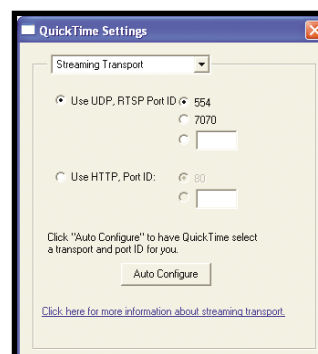
Select HTTP (Hypertext Transfer Protocol) if your firewall prohibits the use of RTSP (Real Time Streaming Protocol).

it is sent to a file on the hard drive (called the spooler) and printed from there. Spooling is a timesaving technique. Because even complex printing files can be saved on a hard drive faster than being printed, spooling a document lets the printing program continue working while printing continues from the spooling file in the background. However, you can adjust spooling options. In WinXP, click Start, Control Panel (make sure you're in Category view), Printers And Other Hardware, and Printers And Faxes. Right-click your printer, select Properties, and select the Advanced tab. If you have trouble spooling a document, click the Print Directly To The Printer radio button and click Apply. ∎

BY STEPHEN J. BIGELOW

You Have Questions . . .

We Have Answers

Do you have computing questions and don't know where to turn to find the answers? SmartComputing.com has the user-friendly tools you need to find real-world answers to your computing questions.

Q My scanner suddenly stopped working! What should I do?

A SmartComputing.com has archived hundreds of helpful troubleshooting tutorials to help you fix your ailing PC's headaches. Follow this easy 3-step search to find out how to alleviate your scanner woes.

Click on **Search All Articles** located in the blue toolbar on the home page.

Step ① Choose to search *Smart Computing, Computer Power User (CPU)*, *PC Today*, and *CE Tips*.

Step ② Select Troubleshooting And Problem Solving.

Step ③ Enter **Scanner Problems** in the search box and click Search.

By following these easy steps, here are just some of the results you will find:

Tips To Help You Get The Picture
—*Reference Series*, December, 2003, Vol. 7, Issue 4
No computer/peripheral combination is entirely trouble-free. These tips can help you tackle common scanner installation issues, as well as some of the problems you may encounter when scanning images.

Troubleshooting Peripheral Problems
—*Smart Computing: Smart Computing*, February, 2003, Vol. 14, Issue 2
The potential for conflicts has increased as external peripherals (those outside of your computer's case) have multiplied. Most problems with external peripherals are easy to troubleshoot. We'll show you how and why.

What To Do When Your Scanner Doesn't Get The Picture
—*Learning Series: Smart Computing*, March, 2003, Vol. 9, Issue 3
We'll show you how to troubleshoot common scanner problems.

Hundreds of articles just like these are only a click away. Try SmartComputing.com's Search All Articles feature today to find the answers you've been searching for; it's as easy as **1 – 2 – 3!**

August Web-Only Articles

Here's a list of this month's additional articles available to you online as a paid subscriber to *Smart Computing*. To view these articles, click the link in the Web-Only Articles area in the left column of the home page. (Only subscribers can read the complete article.)

PageMaker 7
Compile An Index, Part 2
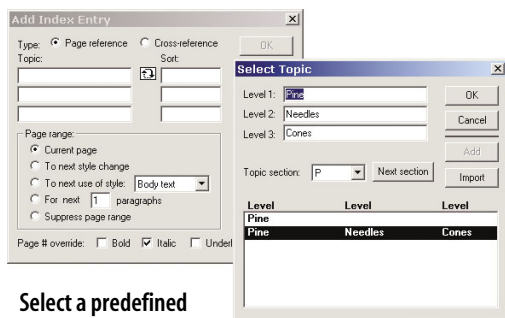
Select a predefined topic for an index entry from the Select Topic dialog box.

Roxio PhotoSuite 5
Knowing Your Options
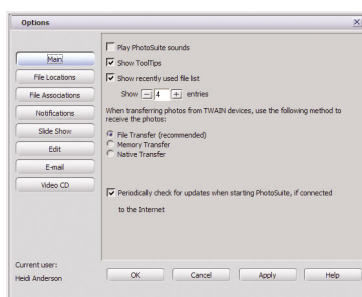
PhotoSuite's Options dialog box lets you customize the software so that it works best for you.

Hardware

For all the latest product reviews, visit the Hardware Reviews & Comparison Charts area at SmartComputing.com (http://www.smartcomputing.com).

Software

Family & Education: Webster's Complete Multimedia Reference Library 2005

Family & Education: Nova Development Art Explosion Scrapbook Factory Deluxe 2.0

PC Operating Instructions

Linux: Sharing Inboxes Between KMail & Evolution
Given the wide variety of email clients in Linux, it would be nice if you could set up a single inbox for use with multiple email clients. This setup would let you view the same email messages regardless of which email client you use. This month, we'll show you how to share a single inbox between popular email clients Evolution and KMail.

Windows: Create An Emergency Repair Disk
You've backed up your computer, so you're all set in case of a system crash, right? But if your PC won't even boot, those backup diskettes won't do you much good. Take your recovery plan one step further and create an emergency repair disk.

Quick Studies

Email
Archive Options In Microsoft Outlook 2002

HTML
Anatomy Of The A Element

Microsoft PowerPoint 2002
Slide & Title Masters

Browsers
Use The A9 Search Toolbar With Internet Explorer

Online
Let Google Do The Walking

Microsoft Works 2002
Create A Continuing Birthday Album

Microsoft Access 2002
Learn About Many-To-Many Relationships

Photoshop
Use The Levels Tool To Adjust For Poor Lighting

Security
Understand & Configure Wi-Fi Protected Access

PageMaker 7
Compile An Index, Part 2

Microsoft Money 2004 Premium
Making Plans For The Future

My Personal Library

W ish you had one customized location to address all your computing questions, problems, and/or interests? Look no further! We have created **My Personal Library**—a subscriber-only feature for all Sandhills Publishing computer publication sites (*Smart Computing*, *PC Today*, *CE Tips*, *Computer Power User*, and more)—that you can access from any of our sites, at any time, just by logging in.

It's quick and easy, and you can create as many folders and store as many articles as you like—there are no limits! After you log into the SmartComputing.com site, follow the steps below to create your own personal library.

Add To My Personal Library

Step ① When reading a full article that you wish to save to your library, click the Add To My Personal Library link in the upper right.

Step ② Create a new folder for the article, or add to an existing folder. You may also include a brief note about the article for future reference.

Step ③ Click Save, and you'll see a screen confirming that the article has been added to your library.

View My Personal Library

Step ① Click the View My Personal Library link, located in either:

A: the upper right of any full article; or

B: within the My Special Features area (the link located next to the Welcome message on the home page)

Step ② Click the Tips & Tricks link in the upper right of your personal library page for helpful hints about creating and organizing your library.

Edit/Reorganize My Library

Step ① When viewing your personal library, you will also see an Edit/Reorganize My Library link at the bottom of the page. Click the link to move, edit, or delete any items within your library.

Step ② The resulting page will include red links that allow you to Delete, Edit, Move, or Add any information within your library.

Step ③ To return to your library, click the Return To My Personal Library link in the upper right.

With over 20,000 articles in our editorial archive, we know it can be tough to keep track of the wealth of information we provide you with a *Smart Computing* subscription—so let **My Personal Library** work for you today! Subscribe today or renew your subscription (if already a current subscriber) to begin your own personal library!

My Special Features

Please select one of the options below:

- Update My Registration
- Change My Password
- View PDF Issues
- View My Personal Library
- Forgot Your Password?

✉ Email This
🖨 Print This
View My Personal Library

Featured Articles   Add To My Personal Library

Featured Articles
March 2004 • Vol 15 Issue 3
Page(s) 62-65 in print issue

WLAN Nuts & Bolts
How To Set up A Wireless Network

Of all the reasons to choose a wireless network over a wired one, the most compelling has to be ease of installation. Because much of the wireless infrastructure exists in the atmosphere, you can set up a WLAN (wireless local-area network) without digging into your walls or stringing cables from one end of your home to the other. That means less mess, less labor, less time, and less hassle.

But don't take our word for it. The only way to experience the truly effortless setup of a WLAN is by doing it yourself. Armed with a suite of networking components and a confident attitude, you can have a full-fledged WLAN up and running in less time than it takes to detail your car or cook a turkey.

■ Be Prepared

My Personal Library   Tips & Tricks

📁 **Advanced Info**
The Bleeding Edge Of Software, *Computer Power User*, Vol. 4, Issue 3, March 2004
Advanced Q & A, *Computer Power User*, Vol. 4, Issue 3, March 2004
Note: Good info to share with user group.
Digital Economy, *Computer Power User*, Vol. 4, Issue 3, March 2004
Note: Great CPU article. Added 5/6/04.
Back Door, *Computer Power User*, Vol. 4, Issue 2, February 2004
Note: This is a very advanced article - have Jen look over it.

📁 **Articles- Read Next week**
WLAN Nuts & Bolts, *Smart Computing*, Vol. 15, Issue 3, March 2004
Note: This is the info Bob wanted to learn more about.
Art Online, *Smart Computing*, Vol. 15, Issue 3, March 2004
Note: Tons of great art site links in this article.
Avalon Advances, *PCToday*, Vol. 2, Issue 3, March 2004

📁 **Fun Stuff**
Adventure, *Smart Computing*, Vol. 9, Issue 11, November 2001
Note: This is a cool article - be sure to read.

📁 **Organization Articles**
Head: Photoshop 6.0, *Smart Computing*, Vol. 15, Issue 4, April 2004
Program Manager , *PCToday*, Vol. 2, Issue 3, March 2004
Note: This is the article you wanted for Program organization.

📁 **PDA Info**
Wireless PDA Power, *Smart Computing*, Vol. 15, Issue 3, March 2004
Note: Read this article soon!

📁 **Web-Only Articles**
All About The User.dat File, *Smart Computing*, Vol. 15, Issue 3, March 2004
Note: Read this

Edit / Reorganize My Personal Library   Tips & Tricks
                                                   Return to My Personal Library

📁 Create A New Folder

Work With Existing Folders:

📁 **Advanced Info** [Delete Folder] [Edit Folder Name]
The Bleeding Edge Of Software, *Computer Power User*, Vol. 4, Issue 3, March 2004
[Delete Article] [Move Article] [Add Note]
Advanced Q & A, *Computer Power User*, Vol. 4, Issue 3, March 2004
[Delete Article] [Move Article]
Note: Good info to share with user group. [Edit Note]
Digital Economy, *Computer Power User*, Vol. 4, Issue 3, March 2004
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Back Door, *Computer Power User*, Vol. 4, Issue 2, February 2004
[Delete Article] [Move Article]
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📁 **Articles- Read Next week** [Delete Folder] [Edit Folder Name]
WLAN Nuts & Bolts, *Smart Computing*, Vol. 15, Issue 3, March 2004
Note: This is the info Bob wanted to learn more about. [Edit Note]
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[Delete Article] [Move Article]
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[Delete Article] [Move Article] [Add Note]

📁 **Fun Stuff** [Delete Folder] [Edit Folder Name]
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[Delete Article] [Move Article]
Note: This is a cool article - be sure to read. [Edit Note]

📁 **Organization Articles** [Delete Folder] [Edit Folder Name]
Head: Photoshop 6.0, *Smart Computing*, Vol. 15, Issue 4, April 2004
[Delete Article] [Move Article] [Add Note]
Program Manager , *PCToday*, Vol. 2, Issue 3, March 2004
[Delete Article] [Move Article]
Note: This is the article you wanted for Program organization. [Edit Note]

📁 **PDA Info** [Delete Folder] [Edit Folder Name]
Wireless PDA Power, *Smart Computing*, Vol. 15, Issue 3, March 2004
[Delete Article] [Move Article]
Note: Read this article soon! [Edit Note]

📁 **Web-Only Articles** [Delete Folder] [Edit Folder Name]
All About The User.dat File, *Smart Computing*, Vol. 15, Issue 3, March 2004
[Delete Article] [Move Article]
Note: Read this [Edit Note]

Site Guide Tips

Print-Friendly Articles

Check out our new print-friendly articles. In the upper right of any full article, you'll see a Print This link. Click the link to print the article in a print-friendly format.

Search All Articles

With over 20,000 articles in our extensive article library, we give you a variety of ways to narrow searches and find what you're looking for quickly. From the home page, click the Search Now link in the Search All Articles section. From this page, you can browse articles, browse issues, or create your own 3-step detailed search. If you have questions, it's pretty likely we've got the answers!

Latest Issues

In the lower right of the SmartComputing.com home page, you'll see a latest issues area, featuring ALL of our publications. To check out articles in the newest issues, click the cover image or the More link. Be sure to log in, so you can read the full articles. As a subscriber, you get access to all five online publications with the cost of your one subscription.

Smart Daily Email

Sign up for our new Smart Daily Email! If you don't want to miss the Daily Tip, Term, Q&A, and Web Site & Product, you can now sign up to have it delivered directly to your email address. From the home page, click the FREE Daily Email - Sign Up Now! link. Be sure to log in; you must be a registered user or subscriber to receive Daily emails.

Find More Online

We can't possibly fit every helpful tip, tweak, or troubleshooting tidbit in print. That's why you'll find a wealth of resources at our Web site. Here are some tips for using our Web site to find more information about the articles in this month's print issue.

Tech Support: How To Get The Help You Need

This month's feature focuses on tech support. Whether you've had a good or bad experience, you know how frustrating it can be. As another line of defense, remember to check our great Web site full of computing resources.

One resource many of our subscribers turn to is the famous Q&A Board. Ask your fellow subscribers for help or answer someone else's question! From the home page, log in and click the Go To Q&A Board Now! link. Search for posts related to your questions or click Post A Question. Share your knowledge and answer others' questions too, if you know the answer. Your subscription may just pay for itself by using the Q&A Board rather than spending money on a tech support call.

Q&A Board

Ask a question, share your computing knowledge, or search our archive of thousands of questions and answers. Go to the Q&A Board NOW!

Don't forget to search our extensive article archive also. With more than 20,000 articles, we've covered nearly every computing topic you can think of. From the home page, click the Search Now link in the center Search All Articles area, or click the Search All Articles link from the upper-left menu.

Search All Articles

Search Now

Browse All Issues
Browse All Articles

Search the editorial archive, including every issue of *Smart Computing* plus all *PC Today*, *CE Tips*, *CPU*, *Guide*, *Learning*, *Reference Series*, and *Processor*.

Help Yourself

Another way to help yourself as you go along is to begin creating your Personal Library. Using the tips we discussed on the previous pages, you may want to create your own folders related to troubleshooting articles. Then they're at your fingertips anytime, just by looking in My Personal Library you've customized for yourself. Just another benefit to you as a subscriber!

Need help using SmartComputing.com?

Call or email us today!

Web Services

(800) 368-8304

webhelp@smartcomputing.com
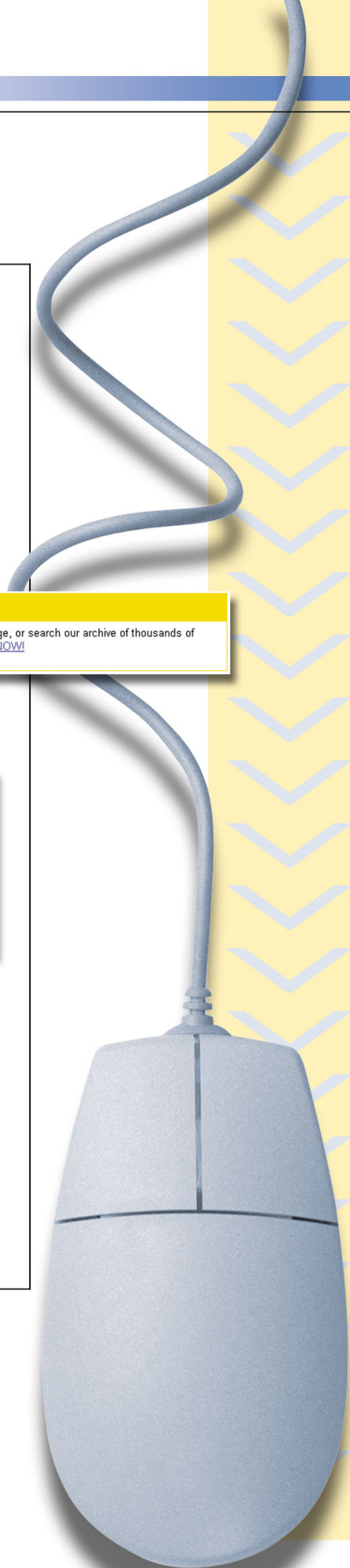
My adrenaline fix
isn't what it used to be.
Double the dose.

AMD
me.

Introducing the AMD Athlon™ 64 FX processor. Take your system to extremes.
Double the data path from 32- to 64-bit and you more than double the thrill factor. Uninterrupted, ear-splitting, streaming audio and rich, razor sharp video make your pad a launching pad. What's more, you get all the power you need to edit, mix, and model your own digital creations with memory to spare. Prepare to blow minds. Get a dose of the AMD Athlon 64 FX edge at www.amd.com/amdathlon64fx

Compiled by Christian Perry
Graphics & Design by Lori Garris & Aaron Weston

Optical Surgery

Slicing Open Today's Optical Options For A Closer Look

Optical media and hardware are so pervasive today that it's easy to take their technical brilliance for granted. Despite the simple-looking construction of CDs, DVDs, and the hardware that reads and burns them, there's some nifty technology behind the scenes that allows for all of that massive storage and lightning-fast read and write speeds. Let's take a look inside these everyday items to see what makes them tick.

CD

The CD core is a layer of polycarbonate plastic, which is covered with a layer of aluminum, followed by a protective layer of lacquer. A graphic layer of ink, which is what manufacturers print the disc's label on, makes up the CD's top layer. CDs printed using a high-volume, commercial process feature a series of stamped pits in the aluminum layer, which in turn create a series of bumps and flat areas readable by a CD player as data.

Graphic Ink Layer
Acrylic
Aluminum
Polycarbonate Plastic

CD-R

Unlike commercially stamped CDs, the CD-R (or CD-recordable) features a layer of dye underneath the aluminum. When a laser writes on it, the dye layer transforms into a series of translucent and dark spots that behaves similarly to the flat areas and bumps commercial CD stamping creates. Some CD-Rs (especially generic versions) further differ from commercially stamped CDs in that they don't include a graphic ink layer.
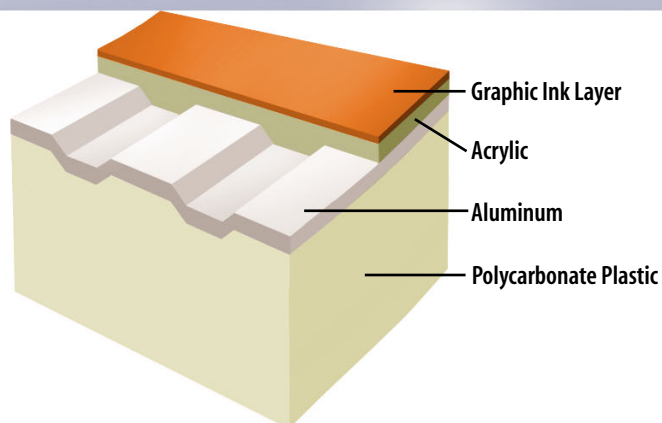
Graphic Ink Layer
Aluminum
Dye
Polycarbonate Plastic
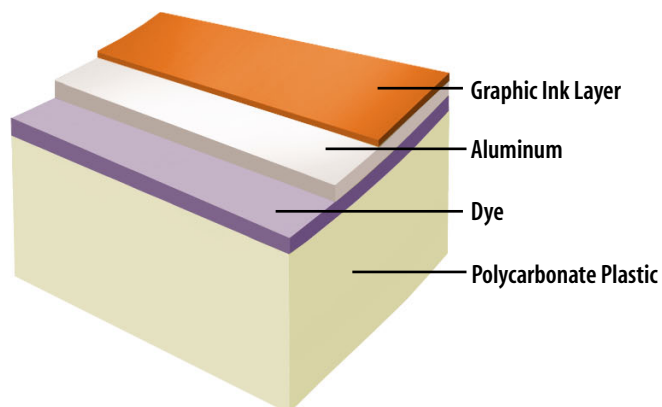
CD-RW

Whereas you can fill a CD-R only once, the CD-RW (CD-rewriteable) features technology that allows for erasing and rewriting. Instead of a dye layer beneath the aluminum, the CD-RW has a layer of **phase-change material**, or material that can exist in different states. In this case, the states are either crystalline, which is a highly reflective state, or amorphous, which has low reflectivity. When a CD burner heats the layer from a crystalline state to an amorphous state, it can leave a series of nonreflective and dark spots on the CD-RW that a CD player can read as data. The burner can use a similar heating process (albeit at a lower temperature) to change spots back to their crystalline state.

Graphic Ink Layer
Aluminum
Phase-Change Material
Polycarbonate Plastic
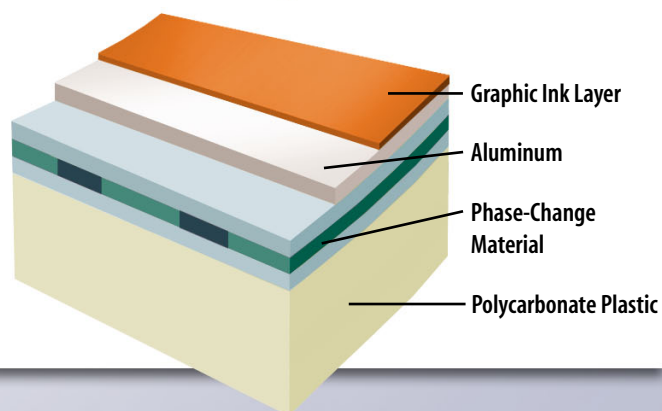
CD Reader

To read the data on a CD, CD-R, or CD-RW, a CD player users a laser to read a circular data track that starts near the inner hole of the disc and extends outward toward the edge. As the disc spins, the laser moves in a straight line from the center of the disc outward. On commercially stamped CDs, light reflects back toward the laser assembly when the laser lands on a flat area, but no light reflects when the laser hits a bump. The CD player interprets each flat area as a 1 and each bump as a 0, and these ones and zeros represent the entire collection of data on the disc. When reading CD-Rs and CD-RWs, the player interprets the dark areas as zeros and the translucent—or nonreflecting—areas as ones.

Disc motor

Tracking motor

Laser pickup

Spinning CD

Spinning CD

Laser **Optical pickup**

Laser **Optical pickup**
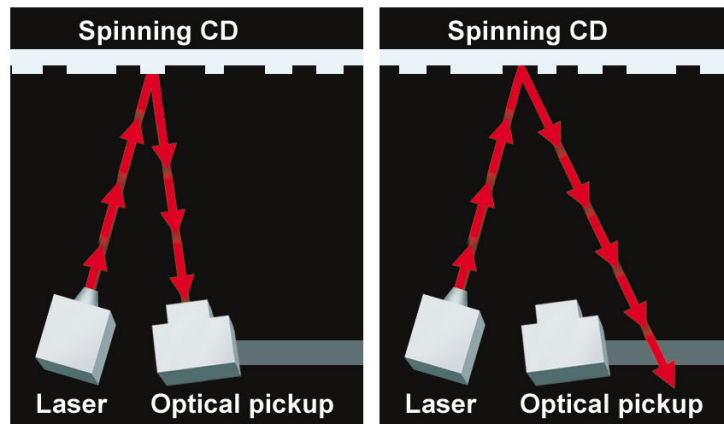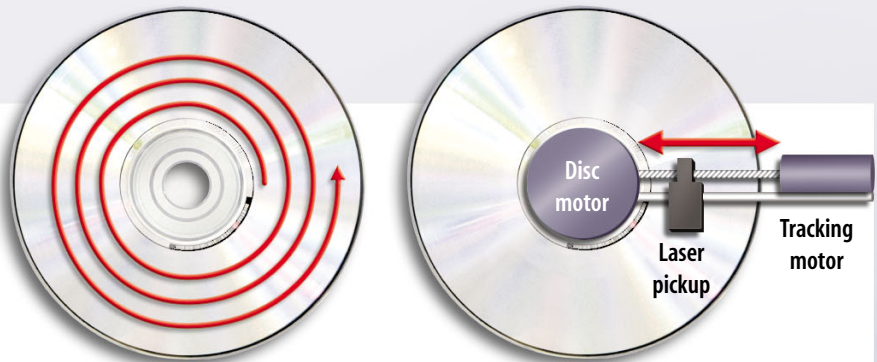
CD Burner

Like a CD player, a CD burner can read CDs using a regular read laser that reflects light off the data pattern on discs. But it also includes a write laser that's powerful enough to alter the material on a CD-R or CD-RW. Just like the read laser, the write laser moves outward across the disc as the spinning assembly spins the disc at varying speeds to account for the increased data path diameter as the laser moves, preserving a consistent writing speed. The burner records the data by constantly enabling and disabling the laser to form a series of translucent and dark spots.

DVD

Although the DVD is the same size and thickness as a CD and features a similar spiral storage pattern, it packs much more data onto its disc by using a much tighter spiral and a smaller bump pattern. To further increase data storage, some DVDs have two data layers or even two readable sides with two layers on each. When a disc has two data layers, one data spiral can start at the outside of the disc and the next spiral can start at the inside to limit the laser's transition time between layers. The DVD player and DVD burner function almost the same as its CD counterparts, using lasers to read and burn series of bumps that represent the stored data.

Recordable DVD

Recordable DVD media functions much like recordable CD media, and while there's plenty of confusion about the varying types of recordable DVD formats, there aren't many differences among them. The DVD-R format lets you record once to each disc, as does the DVD+R format, but the DVD+R format doesn't require formatting before recording or finalizing after recording. DVD-RW allows rerecording of data on each disc, as does DVD+RW, but the latter format is somewhat more compatible with DVD players. DVD-RAM is also a rewriteable format, and while it allows reading and recording at the same time, it's less compatible than the other rewriteable formats.

Hard Drive Backup & Restore Basics, Part 1

This is the first of a two-part series on hard drive backup and restore basics.

Once you have chosen a drive imaging application to back up your hard drive, three important questions remain:

1. When should you back up your hard drive's system partition?
2. What preparations should you make *just prior* to a backup?
3. How do you recover from a computer disaster?

This month, I will address the first question. For the sake of discussion, I am assuming that you have at least two partitions on your hard drive: a system partition containing Windows and all your applications, and a data partition. This series focuses on backing up and restoring the system partition because logical damage to the system partition is the most likely cause of a computer disaster.

When To Back Up Your System Partition

Ideally, you should back up your system partition every day. This is easy if you have a second local hard drive but may be impractical if you have to go through the slow, laborious process of backing up to CDs or DVDs. In this case, I recommend weekly backups. You can perform backups less frequently, but you'll have to expend more effort to bring your computer up to date after restoring your system partition.

If you're *not* taking daily backups, keep a running log of changes you've made to your system. This way, if you have to restore from an older backup, you'll know what changes to reapply to bring your computer back up-to-date.

In addition to these scheduled backups, you should back up your system *just prior to* making a high-risk change to your computing environment. (If possible, you should time high-risk changes to coincide with your scheduled backup.) A high-risk change is one that might precipitate a logical hard drive disaster, such as:

- **Installing a Microsoft Critical Update.** Flawed critical updates have been known to cause computer disasters. Wait a few days before installing a new Microsoft Critical Update. Cruise the computer forums to see if the update is causing any problems.
- **Installing a new application.** Any new application can conflict with other applications, drivers, or hardware. Or it may just be an ill-behaved application, and the best way to be completely rid of it is to restore your hard drive.

(You could run the application's uninstall program, but these are notorious for leaving vestiges of the application behind in your Windows Registry.)

- **Installing new hardware.** New hardware installs new drivers that can potentially cause chaos with your system.
- **Installing a new driver.** Never update a device driver unless you're experiencing problems that the updated driver is purported to fix. Although Windows XP has a driver rollback feature, it's a good idea to back up your system partition before updating a driver as an extra precaution.

Finally, also back up your system partition *just after* you perform certain updates. For example, back up your system just after renewing your antivirus software subscription. If you don't, and then have to restore your system partition from an older backup, your computer will not recognize the renewed subscription, and you may have to renew and pay a second time.

A Final Word

If you can't back up your system daily, you should still perform a daily backup of all email-related information (accounts, message rules, address book, preferences, etc.) and browser bookmarks. Here's why: When you restore from a backup, you'll be automatically restoring your email and bookmarks from the date of that backup. Thus, you will lose any email information and bookmarks that have been changed or added since the backup. If you have a fresh backup of your email information and bookmarks, you can restore this information after you restore your system partition. This will bring your email and browser bookmarks up-to-date. I use Express Assist (http://www.ajsystems.com/ea7.html), a utility that works with Outlook Express and Internet Explorer, to back up my email information and bookmarks. Another product, Eazy-Backup (http://www.ajsystems.com/ezb.html), works with other email clients, such as Microsoft Outlook and Eudora, and with other browsers, such as Netscape and Mozilla. ▌▌

BY ALAN LUBER

Alan Luber *is an author and computer expert. His new book, "PC Fear Factor: The Ultimate PC Disaster Prevention Guide" (Que Publishing), provides an in-depth look at disaster prevention and recovery. To learn more about the book or to contact Alan, visit his Web site at* **http://www.pcfearfactor.com.**

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Examining Errors

Among the many letters we received this month were a few that dealt with **Java**, a platform-independent programming language developed by Sun Microsystems. Java problems are particularly relevant right now as Microsoft and Sun continue to deal with ongoing legal issues over use of the technology. Visit Microsoft's Legal Newsroom at http://www.microsoft.com/press pass/legalnews.asp for more information about the case of Sun Microsystems Inc. v. Microsoft Corp. By the way, Java isn't the same as JavaScript. Java is a programming language, whereas **JavaScript** is a scripting language. Programming languages require a special program called a compiler to translate the code into the binary-coded instructions that computers understand. Scripting languages, on the other hand, become translated in real-time by the same program that executes the code.

> "Java Virtual Machine Launcher.
> Could not find the main class.
> Program will exit."
>
> OK
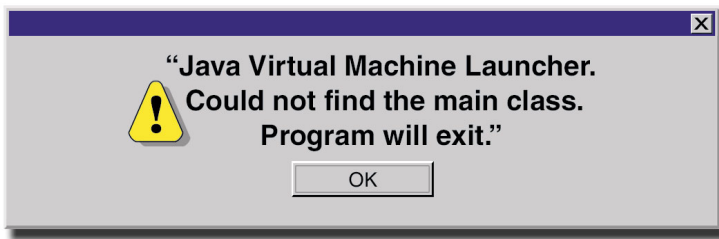
The Problem: A Windows XP user receives a Java-related error message every time he starts his computer, but his system seems to work just fine after he closes the message.

Error Message: "Java Virtual Machine Launcher. Could not find the main class. Program will exit."

This error message points to a couple of potential problems, the first being that the PC's **JVM** (**Java Virtual Machine**; the self-contained environment in which Java applets operate) is either damaged or nonexistent. You can get a reasonable assessment of the situation from the Java test site (http://www.java .com/en/download/help/testvm.jsp). This site determines whether a system has an installed JVM and if it's working properly. If the test indicates that your PC needs a new JVM, click the Get It Now button in the upper-right corner of the site. Follow the instructions to download and install the latest JVM from Sun and reboot your PC.

You need to proceed in a different direction if the Java test site indicates that your PC has a working version of the JVM or if you continue to receive the error message after installing the latest JVM. The problem in this case is probably a conflict between an application in the Startup group and the JVM itself. To verify that this is the issue, open the Start menu, click Run, type **msconfig** in the field, and press ENTER. The System Configuration Utility will display. On the General tab, select the Selective Startup option and deselect Load Startup Items. Click OK to close the utility and reboot your computer. If Windows starts without producing the error message, the problem lies with an application in the Startup group. The only thing left to do is figure out which application is causing the problem.

Return to the System Configuration Utility and choose the Startup tab to see a list of the various applications that load each time you boot the computer.

Deselect all of the items except the one at the top of the list. Click OK and reboot your PC. Look for the error message when Windows starts. If you don't see it, return to the System Configuration Utility and select a different app on the Startup tab. Repeat the procedure, isolating each of the applications in the Startup group until you identify the one that causes the error message.

You then can return to the System Configuration Utility and select all of the apps listed on the Startup tab except the offending one. Click OK and reboot your PC. You'll be able to access the conflicting program after Windows starts, but it will no longer trigger an error each time you boot your PC.

The Problem: Another user reports that he, too, receives a Java-related error message each time he boots his computer, but the error doesn't hamper his use of the computer.

Error Message: "WJView Error. Could not execute main. The system cannot find the file specified."

WJView.exe is an application that helps you view Java applets on your PC. Microsoft developed this program, and it comes bundled with recent Windows versions. The error is most likely the result of a conflict between WJView and an app in the Startup group. The best bet is to disable references to WJView in the Startup group and remove references to WJView from the Registry. (*NOTE: Whenever you need to make changes to the Registry, be cautious and back up your system first. One wrong move could leave your system inoperable.*)

Open the System Configuration Utility (see our previous answer for instructions) and choose the Startup tab. Locate and deselect any references to WJView.exe from the list of apps. Click OK and reboot your PC. After it restarts, open the Start menu, click Run, type **regedit** in the field, and press ENTER. In the Registry Editor, go to HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\WINDOWS\CURRENTVERSION and select the

Run key. Peruse the list of corresponding values for any that refer to WJView.exe. When you find one that does, right-click it and select Delete. Next, go to HKEY_CURRENT_USER\SOFTWARE\MICROSOFT\WINDOWS\CURRENTVERSION, select the Run key, and delete any corresponding values that refer to WJView.exe. Close the Registry Editor and reboot the PC. The error should be gone for good.

The Problem: A Windows 2000 user reports that he receives an error message each time he tries to write a new email message in Outlook 2002. The error indicates that he may have a virus. The user has scanned his system for viruses and found none. He wants to know why he is receiving this error message.

Error Message: "A program is trying to access email addresses you have stored in Outlook. Do you want to allow this? If this is unexpected, it may be a virus and you should choose 'No.'"

Outlook 2002 ships with several embedded security features, including one that prevents third-party programs from accessing Outlook's Address Book or sending email without the user's express permission. Microsoft added this feature in an attempt to control an emerging class of viruses that spread by commandeering the address books of email clients and sending themselves to every email address contained within them. This type of security feature is important because it stops viruses before they have a chance to proliferate.

Unfortunately, this particular Outlook feature prohibits legitimate third-party applications from accessing the Address Book and email program. In this case, our reader probably owns a third-party app that springs into action each time he launches a new email message. Outlook sees the flurry of activity

and, fearing a virus, releases the aforementioned error message.

One way to deal with this message is by clicking Yes each time the error occurs. Doing so temporarily overrides the security feature, thereby letting the reader write and send a message without further disruption. Another option is to uninstall or disable the third-party app responsible for triggering the error. (Microsoft provides no way to disable the security feature in Outlook 2002.)

ICQ 2000 users, for instance, can eliminate the error by opening the Tools menu in ICQ and selecting Options; choosing the Other tab and clicking Advanced Options; and then clicking COM Add-ins and deselecting the ICQ Express option. (It's widely known that ICQ 2000 sets off this error message in Outlook 2002.)

A final option is to download Express ClickYes, a free program designed to recognize this particular Outlook error message and close it by activating the Yes button for you. Visit http://www.express-soft.com/mailmate/clickyes.html and click the Download Your Free Copy Of Express ClickYes v1.0 link. Follow the provided instructions to install and configure the utility.

The Problem: A user of WinXP Professional receives an error message each time he logs in to Outlook 2000. If he tries to log in a second time under the same account name, the error message doesn't appear. The situation is the same whether he logs in as an administrator or as a limited user. The reader tried to locate a solution in the Microsoft Knowledge Base but was unable to find one.

Error Message: "Microsoft Visual C++ Runtime Library. Runtime Error! Program: C:\PROGRA~1\MICROS~4\Office\OUTLOOK.EXE. Abnormal program termination."

Kudos to our reader, who wisely consulted the Microsoft Knowledge Base (http://support.microsoft.com) before requesting outside help. As this month's Feature Package articles reveal, you are your own best source for technical assistance. Unfortunately, the Knowledge Base had no information about this particular problem. So what's next?

The best plan is to assess the situation and apply a few basic troubleshooting techniques. In this case, we suggest that the reader attempt to repair or reinstall Outlook 2000 by inserting the Outlook 2000 CD-ROM and following the instructions that appear on-screen. Either procedure should fix problems with damaged code, data corruption, and other problems associated with the wear and tear of daily computing.

If that doesn't work, the problem probably involves a compatibility conflict between Microsoft Outlook 2000 and another program. First, the reader should download and install the latest updates for Microsoft Outlook 2000 and all other major system apps. If that fails to resolve the issue, he should begin to systematically uninstall apps that could possibly conflict with Outlook 2000. The reader should focus his attention on system utilities, including antivirus utilities and firewalls, that run in the background. By stripping his system back to the basics—and rebooting once after uninstalling each program—he should be able to pinpoint the source of the conflict.

After identifying the conflicting app, the reader should reinstall it. Doing so sometimes eliminates a conflict. If that doesn't work, he should contact the program's developer for a workaround solution (which may require upgrading Outlook 2000). In a worst-case scenario, he'll have to make a tough decision about whether to keep Outlook 2000 or the conflicting program. ▐▌

BY JEFF DODD

Fast Fixes

F-Prot Antivirus Version 3.14e Update

Update your version of F-Prot Antivirus for Windows. The update does a better job of scanning encrypted executables that may transmit inside password-protected ZIP files. Also, when users install the update, it applies more restrictive security settings to provide better protection.

To install the update, type the URL (uniform resource locator) we listed below in the Address field of your browser window to access the Download Center/Home User Downloads section of Frisk Software International's site. Click the Download link that corresponds to your existing F-Prot installation. You will need to enter your F-Prot user information, and then the update file will download to your computer (remember where you save it). Double-click the file you just downloaded, and the wizard will step you through the update installation. ◆

http://www.f-prot.com/download
/home_user

Legacy Family Tree 5.0 Update

If you're building and maintaining your family tree using Legacy Family Tree 5.0 Standard or 5.0 Deluxe editions, you may want to take advantage of the free 5.0 update. Millennia includes several fixes in this update, including printing format improvements and better data import and export functions. You'll also be able to chart your ancestry back as far as 250 generations (if you have that much information, of course).

To download the update, go to Millennia's site (using the URL we listed below) and scroll down to the area that requests your email address. Enter your address and click the Next Step button below it. On the following Web page, click either the main site or alternate site download button to begin the process. The next Web page that displays lets you download the update and install it from the downloaded file or install the update directly from the Web. Make your choice and follow the directions that appear on-screen. You will need to enter your software's serial number during the update process, so make sure you have it handy. ◆

http://www.legacyfamilytree.com
/downloadupdate.asp

Lotus SmartSuite 9.6.1 Update

The latest update to Lotus' SmartSuite version 9.6 fixes numerous bugs in various SmartSuite programs, including Word Pro, Lotus 1-2-3, Approach, and Freelance Graphics. Much of the update is dedicated to making these applications more interoperable with similar Microsoft applications.

The update is free and available at the URL we listed below. Type **9.6.1** in the first field, select Updates from the drop-down menu, and click Submit. On the following Web page, scroll down until you see the SmartSuite For Windows 9.6.1 Update link. Click the link, read the instructions on the next Web page, scroll to the bottom of the page, and click the SS_Win_Rel_961.zip link to begin the download. Save the file to your computer's Desktop, finish the download process, and double-click the SS_Win_Rel_961.zip file to unzip it. When you double-click the SS_Win_Rel_961.exe file, the update wizard will walk you through the update process. ◆

http://www-1.ibm.com/support/us
/all_download_drivers.html

Update Of The Month

Quicken 2004 Release 5 Update

Quicken 2004 users will want to take advantage of this free update. A problem with opening data files under certain conditions, as well as a problem that may occur when using scheduled transactions, are both items that Intuit fixes in this release.

In addition to updated tax exemption calculations, this update also provides more flexibility in configuring calendar preferences and currency settings. Intuit also updated Quicken 2004's forms and reports, including those for tax rates, investment purposes, and missing checks. If you use Quicken 2004's online banking functions, you'll notice minor interface changes there, too.

The easiest way to get the Release 5 Update is to use Quicken 2004's One Step Update. (Intuit recommends that you complete all of its current Internet sessions, such as paying bills online or downloading transactions, before installing this update.) To open the One Step Update dialog box, launch your Quicken program, open its Online menu, and click One Step Update. Deselect all of the checkboxes in the dialog box and click the Update Now button; Quicken 2004 will download and install any available updates, including the Release 5 Update. ◆

http://www.intuit.com/support
/quicken/updates/release_notes
/2004_r5_notes.html

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The StreetPilot® III from Garmin has features found in expensive in-dash navigation systems, plus one very important quality the others don't have. StreetPilot III is portable, so you can have the best in GPS navigation in any car you drive. Look up addresses, attractions and other services, and StreetPilot III will create a route and provide turn-by-turn directions with voice prompts to get you there.

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Q&A

Need help with your hardware or software?
Looking for simple explanations on technical subjects?
Send us your questions!

Online

Q I'm having problems with Internet Explorer and the home page it displays. Even when I select the Web page I want for my home page (on the General tab in the Internet Options dialog box), I see this when I log onto the Internet: res://mshp.dll/index.html#37049. How do I correct this problem? I want the home page I selected to appear every time I launch IE.

A Consider yourself hijacked. The Mshp.dll file (as noted in res://mshp.dll/index.html#37049) is installed on your system by a program titled CWS (CoolWeb-Search), created by miscreants who want to steer you to their Web sites. CWS, which first appeared in 2003, integrates itself throughout your computer and can be quite difficult to remove. Renowned programs such as Ad-aware (http://www.lavasoftusa.com) and Spybot Search & Destroy (http://security.kolla.de) have had mixed results eliminating CWS due to the large number of variants lurking on the Internet. Fortunately, you can download a program, aptly named CWShredder, which can help.

To download CWShredder, visit http://www.spyware info.com/~merijn/cwschronicles.html#cwshredder. If CWS blocks your browser from visiting this Web page, try using this URL (uniform resource locator): http://209.133.47.200/~merijn and click Downloads on the left side of the page. Many of the CWS variants will try to prevent you from reaching anti-spyware sites, so using the numeric IP (Internet Protocol) address will circumvent their efforts. Once you've successfully reached the site, download the latest version of CWShredder. If you have a particularly nasty strain of CWS, you may have to use the following URL to download CWShredder: http://209.133.47.200/~merijn/files/CWShredder.exe.

After downloading CWShredder, double-click it to launch the program. After it removes CWS, you'll need to take steps to protect your system from becoming infected again. CWS takes advantage of vulnerabilities in Windows, so you should use Windows Update to download the proper updates.

To use Windows Update, launch IE and click Windows Update from the Tools menu. If this is the first time you've visited Windows Update, it will prompt you to download a small program that scans your system to determine which updates it should recommend. Once the program finishes downloading, click Scan For Updates. After a few minutes, Windows Update will list a series of available updates, some of which it categorizes as Critical Updates And Service Packs. Click the Review And Install Updates link and then click Install Now. Depending on the updates you install, you may have to restart your computer afterward.

If you have Windows XP or Windows Me, you can automate this process by configuring Windows Update so it runs according to your preferences. In WinXP, open the Start menu, right-click My Computer, and select Properties. Choose the Automatic Updates tab, select the Keep My Computer Up To Date checkbox (this checkbox isn't available on some WinXP systems), and select any of the three radio buttons below.

The settings next to these radio buttons vary among systems, so select the one most appropriate for you. Some settings notify you when updates are available, some automatically download updates and let you set a schedule for installation, and others let you turn off the Automatic Updates feature. After you select a radio button, click Apply and close the dialog box.

In WinMe, open the Control Panel (from the Start menu) and select the Automatic Updates icon. Choose the desired setting by selecting the appropriate radio button and click OK.

Q Every time I use Internet Explorer, I end up with the Web address "www.find4u.net" as my home page. I thought this was the result of spyware, so I used Lavasoft's Ad-aware program to remove the spyware. However, I still get the same home page. In addition to my problem, Internet Explorer closes the window by itself. How can I fix this problem?

A Find4U is variously described as a browser hijacker, spyware, and scumware, depending on the Web site providing the description. Its authors, however, describe Find4U as ". . . a Performance-Based Advertising Network that reaches millions of consumers daily, via our partnerships with top quality web sites" (at http://www.find4u.com). Fortunately, there are many Web sites and forums dedicated to describing the removal of Find4U.

If the free version of Ad-aware doesn't work for you, several people writing in various online forums have reported success with the Ad-aware Plus version ($26.95; http://www.lavasoftusa.com).

PestPatrol is another commercial program with widely reported success at removing Find4U ($39.95; http://www.pestpatrol.com). The company, PestPatrol Inc., also offers a free manual removal procedure at http://www.pestpatrol.com/PestInfo/f/find4u.asp, but we must warn you that it's complicated and involves extensive use of the Registry Editor.

Yet another program to try (again, with widely reported success) is the newest version of Spybot Search & Destroy (1.2), but we suggest that you download the most recent updates, as well (http://www.safer-networking.org). Spybot S&D is free, but its author, Patrick Kolla, requests donations.

If none of these solutions works for you, you can try analyzing your system using HijackThis (http://www.spychecker.com/program/hijackthis.html). It's a free tool that includes instructions on how to use its reports to find and correct problems in your system.

Hardware

Q The new SanDisk SmartMedia card reader/writer wouldn't work when I plugged it into the front USB 2.0 port on my Dell computer. SanDisk's tech support department told me to plug the reader into a USB port on the back of the computer because there is more power in the rear ports, so I did and it worked. Can you explain why there is a difference between USB ports in the front and back of a computer?

A USB (Universal Serial Bus) ports come in two flavors: those that carry both data and power and those that carry only data. It's the same issue with both original USB and newer USB 2.0 ports. For example, USB ports in high-end keyboards are often unpowered or provide only low power. You can run a battery-powered mouse from one but not a device that needs power (such as a video camera). It's more common to find a powered port in a monitor base or in a USB hub designed as a standalone device. As to whether USB ports on the front of a computer are powered or not, it depends on the manufacturer of the

unit's motherboard. USB ports that also carry power cost more. If the ability to run a USB-connected device that needs power from the front of your PC is important to you, it's a good idea to ask before you buy.

Windows

Q I build a new computer for my wife every three years. In the past, I've transferred email messages, the email program's settings, and its address book by hand. I know there has to be an easier way to do this. Currently, I need to transfer this data from a Windows 98 Second Edition system to a Windows XP Home Edition system. Could you tell me the easiest way to do this?

A Microsoft has developed a tool that can help you make a smooth transition from one computer generation to the next. Dubbed the Files And Settings Transfer Wizard, this tool can cut down on the amount of work you'll need to do to set up a new computer with the settings, preferences, and files that your wife uses. Microsoft designed this tool to work with its consumer Windows OSes (operating systems) from Win98 to WinXP.

But before we explain how to use it, we must point out that this wizard isn't all-powerful or all-knowing, so don't assume that it can handle the settings for each and every application installed on your wife's old computer. You'll also need to install your applications on the new system because even though the wizard transfers settings and files, it doesn't transfer the applications. In addition, the settings and preferences the wizard transfers are for Microsoft applications. Therefore, if you're using a non-Microsoft email client or browser (or any other non-Microsoft app, for that matter), you'll need to manually transfer those settings.

Next, you'll need to choose one of three ways to transfer the data from one computer to another. You can decide to store the information on removable media (such as CD-RWs [CD-rewriteables]) or use a serial cable (sometimes referred to as a "null modem" cable) or transfer the data via your home network. You didn't mention whether you had a home network, but we'll cover all three scenarios anyway. To use the wizard, you'll also need a blank 3.5-inch floppy diskette.

Initiate the process on your WinXP PC. Open your Start menu and click All Programs, Accessories, System Tools, and Files And Settings Transfer Wizard. When you see the wizard's Welcome dialog box appear, click Next. Select New Computer and click Next. When the wizard asks if you have the WinXP CD, select I Want To Create A Wizard Disk In The Following Drive and click Next.

Insert the diskette and click Next. When the wizard finishes creating the Wizard Disk, it will instruct you to go to your Win98SE computer. Leave the wizard running on

your WinXP computer as you do so. At the Win98SE computer, insert the diskette in the diskette drive, click Run from the Start menu, type **a:\FASTWiz** in the field, and click OK. This will launch the wizard.

At this point, you'll need to select a method for transferring your files and settings. If you're using a serial cable, you'll need to connect both computers by attaching the serial cable to each computer's serial port. If you plan on using a home network, make sure each computer is properly configured to use the network. Or, if you're using removable media, be sure you have enough discs or storage capacity for all the files you want to transfer. Make the appropriate selection in the wizard (on your computer running Win98SE) and click Next.

Now you have to decide what you want to transfer. You can transfer only the settings, only the files, or both the files and settings. There's also a fourth option that lets you specify particular settings and files for programs that aren't installed in the default locations. When you make your selection in the wizard running on the Win98SE computer, the wizard will display the types of data it will transfer. When you're comfortable with your selections, click Next to have the wizard start assembling the data.

If you're using diskettes, CD-RWs, or other removable media, the wizard will prompt you to insert the media. Click OK after doing so. Depending on the amount of data you need to transfer, you may have to repeat this step numerous times. When the wizard displays "Completing The Collection Phase," click Finish. Take the media you've just created to your WinXP computer.

From the wizard running on your WinXP computer, click Next, select the appropriate drive for the removable media you're using, and click Next. Insert the media into the drive and click OK. If you have multiple diskettes or discs, the wizard will prompt you individually for each one. When it finishes transferring all the data, click Finish and restart your computer. Your settings and files should be available when your computer restarts.

If you're using either the serial cable method or transferring your data via a home network, the migration process is faster than it is when using removable media. We'll discuss the network method first. When you click Next (on your Win98SE computer) after selecting your files and settings, the wizard will prompt you for the password on your WinXP computer. Enter your password and click OK. The wizard will automatically transfer the settings over the network to your WinXP computer. When the wizard finishes, click Finish on both your Win98SE computer and your WinXP computer. Restart your WinXP computer to implement the changes.

Using a serial cable is slightly different than using a network for transferring your data. When you select the Direct Cable option for your transfer method, you'll need to click Autodetect on both wizards (running on your Win98SE and WinXP computers) to configure the serial port settings. Once the wizard has successfully established a connection between the two computers, it will begin transferring your files and settings. When it finishes, restart your WinXP computer to implement the new settings. If you've followed our steps, the majority of your files and settings (for Microsoft applications, that is) should transfer to your wife's new computer.

Q I'm using the WinXP Home Edition, and I'd like to keep it up-to-date. However, because of my very slow Internet connection (old phone lines), I haven't been able to download all of Microsoft's updates for WinXP (some would take forever to download). Is there a CD available with the current updates (especially the critical security updates) that I can purchase and use to update WinXP?

A Yes, there is a CD you can use, and the best news is that it's free. To order it, visit http://www.micro soft.com/security/protect/cd/order.asp or call (866) 727-2338. According to a company spokesperson, Microsoft released the WSUCD (Windows Security Update CD) in February 2004. But because the CD offers only critical updates through Oct. 15, 2003, Microsoft continues to recommend that people visit its Windows Update site (http://www.windowsupdate.com) to obtain the most recent updates for their Windows PCs.

In addition, Microsoft is currently testing WinXP Service Pack 2, which will include the Windows Security Center, an updated firewall, and a pop-up blocking tool. SP2 may be ready by the time you read this; otherwise, it should be available soon.

Q I am running WinXP Professional on both my notebook and desktop computers. My desktop computer has a Pentium 4 with 1GB of RAM, and I maintain the desktop PC on a daily basis specific to running anti-spyware, utilities, Disk Defragmenter, and an antivirus app, so I know I have a "clean" machine. Whenever I shut down the desktop PC, it takes a full 78 seconds to completely turn off. My notebook, which has almost the same programs on it, turns off very quickly. Is there a reason why my desktop computer takes so long to shut down?

A If you analyze the two computers' startup times, you may discover the same thing: Your desktop PC may take longer to start than your notebook does. Startup and shutdown times are often related issues. Also, if your desktop system is part of a network and/or has a major server role, it will take longer to shut down than your notebook. The same is true if you've enabled file and printer sharing. Nevertheless, we'll address a few items that might speed up your shutdown process.

Don't have WinXP clear your paging file at shutdown. For security reasons, you may have set WinXP to clear

your paging file (Pagefile.sys) of its contents whenever you shut down your computer. Your computer uses the paging file to store temporary files and data, but when your system shuts down, the information, such as unencrypted passwords, may stay in the file. Some people prefer to have the system clear the paging file at shutdown; however, clearing the paging file can significantly slow down the shutdown process.

If you feel comfortable editing the Registry—*and* if you backed up your Registry and know how to restore it if things go wrong, which is crucial—you can configure WinXP so that it shuts down without clearing your paging file. To open the Registry Editor, click Run from the Start menu, type **regedit** in the field, and press ENTER. In the left pane, navigate to HKEY_LOCAL_MACHINE\ SYSTEM\CURRENTCONTROLSET\CONTROL\SESSION MANAGER\MEMORY MANAGEMENT. In the right pane, find and right-click ClearPageFileAtShutdown, select Modify from the context menu, and then change the Value Data field to 0 (zero). Click OK, close the Registry Editor, and restart your computer. Whenever you shut down WinXP from now on, the system won't clear your paging file, so you should be able to shut down faster.

Close services more quickly. Another change you could make in the Registry Editor pertains to services. Go to HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\CONTROL, right-click WaitToKillService Timeout in the right pane, select Modify from the context menu, and then change the Value Data field from the default 20000 to a value lower than 2000. Various folks report optimum performance with settings of 100 to 400. However, please note that Windows isn't entirely idle during this apparent "timeout"—it's also closing your hard drive volumes properly. In a system with only one or a few drive letters (for example, C:, D:, E:, and so on), you may not encounter a problem with the 400ms (millisecond) setting. But one of our systems goes all the way to drive S: and 400ms wasn't enough time to complete the task properly. The time we gained in shutdown was more than lost when Windows wanted to check the last three drive volumes for consistency at startup. You may need to try various values until you can find the best one for your system. Once you've entered a new value, click OK, close the Registry Editor, and reboot the system to test it. Repeat until you find your optimum setting.

Turn off unnecessary services. Another way to reduce the amount of time it takes to close a service is not to start it at all. The added bonus to tweaking your services environment is that in addition to making your system shut down faster, your system's startup also will become quicker because these services take time to load.

Learning which services you can safely eliminate is a slow but rewarding process. Start by opening the Services management console. From the Start menu, click Control Panel, click Administrative Tools (Performance And Maintenance category), and double-click Services. The services that list Automatic under the Startup Type column are the ones that start each time you start Windows. Most of the services listed will have a description next to them, while others are obvious.

For example, on one of our systems, an item listed with the uninformative name SAVscan has a description that reads, "Handles Norton AntiVirus Auto-Protect Archive Scanning," whereas another service without a description simply reads, "WinFax PRO." Both services start automatically, and it's unlikely we'll turn either of them off; however, we might want to see what happens when we stop Routing And Remote Access from loading automatically. The Services management console describes Routing And Remote Access as "Offers routing services to businesses in local area and wide area network environments," and we don't think we'll need that type of service on a daily basis.

To change how a service starts, right-click the service name, choose Properties from the context menu, open the Startup Type drop-down menu, and choose Automatic, Manual, or Disable. To stop a service that has already started, just right-click the service and select Stop from the context menu.

Take several days to fine-tune your elimination process. If your system stops offering you a service you need (for example, the Still Image Service affects how scanners and other digital-imaging devices perform), you can simply restore it by changing the Startup Type back to the Automatic setting.

Software

Q I downloaded the Mozilla 1.6 Web browser and was generally pleased with its performance, but I couldn't print any Adobe Acrobat documents. Any suggestions?

A We've done a fairly exhaustive search of the support forums accessible at and through Mozilla's Web site (http://www.mozilla.org) but were unable to find any other users complaining of an inability to print from the Acrobat program. There are suggestions about how to enable and disable the display of Acrobat PDF (Portable Document Format) documents in the Mozilla browser's window instead of using Acrobat's window, but none of the reasons for doing one or the other has anything to do with printing.

Our experience with Acrobat Reader over the years indicates that it sometimes doesn't cooperate if you install it before you install your browser. So, our suggestion is to uninstall Acrobat Reader and then reinstall its most recent version from Adobe's Web site (http://www.adobe.com; click the Get Adobe Reader button).

FAQ

Frequently Asked Questions

Answers to users' most common questions about
Wireless Networking

FAQ: I've heard some conflicting stories about the amount of wireless range that's available indoors. What kind of range should I expect, and what factors affect wireless range indoors?

It's easy to understand why you hear so many contradictions; several physical factors affect the amount of wireless range you can expect indoors. Although most wireless devices promise ranges from 100 to 150 feet indoors, their weak radio signals are blocked and/or deflected by walls, doors, partitions, leaded glass, concrete, water, and other objects. Practical ranges will usually be somewhat less—perhaps 50 to 100 feet—depending on the layout of the building in question and the materials used in its construction. This means you'll need to do a little testing to determine the maximum wireless range for your particular situation. Wireless device manufacturers, such as Linksys (http://www.linksys.com), often suggest that you start with your wireless device and access point in the same room and then systematically try going online with your wireless device (such as a notebook) in various locations, monitoring the data rate your device receives in each location.

Wireless devices typically support a variety of channels. Each channel uses slightly different frequencies within the same band, but some channels may offer better results in your particular location. Try using several channels if you have limited range issues.

In addition, check the configuration of your wireless device and ensure that it's set for full or maximum speed. Devices that are configured to operate at lower speeds may allow for somewhat better ranges but won't offer top speeds when used in close proximity to an access point.

FAQ: What is WEP and WPA? How are they different and when should I use them?

These are two security schemes that protect your wireless data as it travels over open airwaves. WEP (Wired Equivalent Privacy) encrypts wireless data using a series of digital keys (usually 64 bits, 128 bits, or 152 bits in length). By using the same keys on each of your wireless network devices, you prevent unauthorized wireless devices from monitoring your transmissions or using your wireless resources. WPA (Wi-Fi Protected Access) is a more recent wireless encryption scheme using a 128-bit key, but it applies more powerful encryption types (such as TKIP [Temporal Key Integrity Protocol] or AES [Advanced Encryption Standard]) and can change the keys dynamically on every authorized wireless device. This prevents unauthorized tapping and decryption of your sensitive wireless data.

FAQ: Can you cover wireless standards and tell me what data rates I should expect while using wireless devices?

Home and small-office wireless devices are all based on variations of the IEEE (Institute of Electrical and Electronics Engineers) 802.11 wireless standard. The 802.11b standard is the oldest and most widely adopted standard. It uses the popular 2.4GHz frequency band, providing data rates up to 11Mbps (megabits per second) at ranges of 100 to 150 feet indoors. The 802.11a standard is a bit more recent, using the relatively open 5GHz band to achieve data rates up to 54Mbps at ranges of only 25 to 75 feet. Although 802.11a devices are more expensive than 802.11b devices, they can coexist with 802.11b wireless network devices in the same area.

The 802.11g standard is the newest IEEE wireless standard. Like 802.11a, 802.11g can achieve data rates up to 54Mbps, but 802.11g uses the more common 2.4GHz band and offers ranges from 100 to 150 feet. 802.11g is also backward-compatible with 802.11b devices.

Keep in mind that data rates can vary, depending on real-life radio transmission factors such as range and interference. As you move the wireless device farther from its access point, radio signals weaken and data rates decrease. Interference also plays a part in this situation, especially on the popular 2.4GHz band shared with cordless phones, microwaves, and other commercial electronic devices. For example, you may notice data rates decrease dramatically whenever your neighbor talks on his cordless phone. The phone's interference forces your wireless device(s) to resend a lot of data that was lost due to interference, thereby reducing the effective data rate.

Drive-By Fraud & Online Banking Woes

In October 2003, I received a phone bill from my local provider, Verizon. It included $174.12 of charges from AT&T. The charges consisted of two calls listed as COMOROS CW and two other calls listed as GUI BIS-SAUPG. AT&T investigated the calls but claimed they were legitimate and suggested that the numbers may belong to an online gambling company. AT&T eventually granted me goodwill credit for the calls, and I asked AT&T to block future calls to these services from my residence. On the January 2004 bill, I had another charge for $11.34 listed as GUI BISSAUPG. Again, AT&T insisted that the call originated from my residence but agreed to extend a credit to my account after I wrote to the FCC (Federal Communications Commission). I'm tired of these charges showing up on my phone bill, and I resent the fact that AT&T makes it sound like it is doing me a favor by issuing credits on calls I never placed.

Gotthard Dillier
Washington, D.C.

COMOROS CW refers to Comoros, the name of an island along the Eastern coast of Africa, and GUI BISSAUPG refers to the West African country of Guinea-Bissau. These countries are often linked to gambling and other adult entertainment services that are known to use **dialers**, small code that can configure a user's dial-up options in Windows. There are good and bad uses for dialers; some can install themselves without the user's knowledge, configure themselves to be the primary connection in Windows, and connect at random without the user's knowledge. Toll fees for these services may be excessive and are often not disclosed to the user.

Malicious dialers leave telephone companies in a tight spot. An AT&T representative says that although AT&T will investigate complaints on a case-by-case basis, it cannot act as an enforcement agency for various reasons, including privacy concerns. Users can report suspected crime to the FCC, but these kinds of cases are difficult to prosecute because the offending companies may reside overseas. A customer's best bet is to make his system safe and secure.

Internet Explorer is vulnerable to "drive-by" installations. Visiting the wrong site may result in a pop-up window that installs software, such as dialers, via ActiveX. If you want to continue using IE, disable ActiveX by clicking Internet Options from IE's Tools menu, choosing the Security tab, clicking Custom Level, and changing the options dealing with ActiveX to Disable or Prompt. (See "Beware Of Spyware, Adware & Sneakware" on page 47.) In addition, we suggest that Gotthard use software such as Spybot Search & Destroy (free; http://www.safer-networking.org) and Ad-aware (free; http://www.lavasoftusa.com) to eliminate dialers on his system. He should keep the programs current and scan his system often.

I'm retired and travel among my children's homes in Georgia, Florida, and Wisconsin. Because of this, I opened an account with an online bank named NetBank. I made a large deposit in early February, the majority of which came from selling an item in an online auction. I later learned that my account was on hold and my supplier could not ship the item until he received payment. NetBank asked for proof of identity and residence. When I told them I live with my children, it said any mail to the address on file would suffice. After repeated failed attempts to resolve the hold, my customer eventually stopped payment on the cashier's check fearing fraud. Meanwhile, I haven't had access to roughly $2,100 for more than two months. Is there anything you can do to resolve this hold?

Elena Egidi
Lawrenceville, Ga.

We contacted NetBank's PR representative, who was willing to help if we could provide Elena's account number. Instead of handling personal financial data, we put Elena in contact with NetBank's PR rep and the two worked together to resolve the dispute. Almost a month later, we received an email from Elena saying she received a check closing out her account with NetBank.

Pervasive Or Invasive?

My wife bought her first-ever new car last week. Prior to this, we've had a perfectly reasonable arrangement whereby I was the one who got the new cars, passing the previous car on to her every few years or trading in the "old" automobile while she continued to drive the other (even older) one.

This approach has worked for many years, and I saw no reason to change it. Why tamper with a system that's working so well?

She saw it differently. After driving our SUV for 10 years, Lesley decided it was time that *she* got the next new car. (Go figure.)

And so she did. After a full year of research, test-drives, ad perusals, Web searches, phone calls, and consultations with friends, relatives, neighbors, colleagues, and the guy standing in line in front of her at the grocery store, Lesley sold our SUV and purchased a brand-new MINI Cooper.

The Cooper is a fine automobile. Built in England, it's a BMW-owned reissue of a sporty—and very small—British coupe with lots of power and a well-designed and functional array of performance features and comfort options. (And it's cute. Very cute. Lesley likes to think that it looks charming *and* sporty, but mainly it looks as if it should have a large wind-up key in the back.)

It's not a terribly expensive car. Generally speaking, neither editors nor editors' wives make enough money to drive pricey, luxurious cars. (The editor of *The New Yorker* is probably an exception to this rule. I would apply for that job, but I'm pretty sure that the editor of that magazine is required to understand the cartoons.) Yet, reasonably priced though it is, the MINI Cooper sports an astonishing array of high-tech functionality. Computers control almost everything: The brakes and suspension adjust themselves depending on the angle and speed at which the car enters a turn. The car senses road noise, increasing the stereo volume at high speeds. It tracks what the weather has been like—if you've been grinding the car into life on cold days, the service light will come on sooner than if you've been starting up on balmy Florida mornings. The throttle is a drive-by-wire arrangement in which linkages and cables have been replaced with a computer chip that signals the engine when more gas is required. The windshield wipers adjust themselves depending on the amount of moisture on the windshield and the speed of the car. An LCD panel mounted above the steering column displays your speed, miles to go before a fill-up is required, the outside temperature, and the gross national product of the Eastern European nation of your choice.

In other words, the Cooper is basically a rolling computer with several very nice cup holders.

Lesley's new car is a good example of what techies call "pervasive computing," the idea that computers are now built-in to just about everything and that at some point, all of these computers will be able to talk to one another. Already, one can purchase televisions that communicate with computers, Internet-enabled refrigerators that keep track of what food is inside and how long it's been there, cellular phones that take and email pictures, and car stereos controlled by PDAs (personal digital assistants). One can easily imagine a future in which our watches, televisions, stereos, kitchen appliances, autos—even our clothes and our homes—are all computerized and all interconnected.

What will that be like? Will it be a good thing? Or does it begin to sound a bit too Orwellian? Will some of us find it too intrusive? Or will we welcome the convergence and intelligence of these devices and revel in our newfound, technology-abetted power?

I admit to being a techie and a bit of a gadget freak, but I'm not sure I want to be quite *that* connected. I don't really feel comfortable with the thought that my house and my appliances could be whispering to each other. What if they're plotting against me? What if my refrigerator and my microwave decide to call up Best Buy and order themselves a companion in the form of a new stove? What if they all get into an argument?!

I think I'll just stick with my collection of discrete computers, cell phones, PDAs, and the like. I'm sure I'm missing out on some fun, but I kind of like the idea that the only things that talk to each other in my house are people.

Anyway, I'm pretty sure that Lesley's new MINI Cooper has nothing to say to my 1969 Ford Bronco. Although I think I see them huddled together out on the driveway. Whispering. ▮

BY ROD SCHER

Rod Scher *is a former software developer and a recovering English teacher. He's also the publication editor of* Smart Computing *and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at rod-scher@smartcomputing.com.*

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